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IOANNES BAPTISTA CANANO
1515-1578
GIROLAMO DA CARPI
1501-1556

MUSCULORUM HUMANI CORPORIS PICTURATA DISSECTIO

(FERRARA 1541?)

FACSIMILE EDITION

annotated by

HARVEY CUSHING & EDWARD C. STREETER

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INTRODUCTION

BY

HARVEY CUSHING

Among the many printed sheets struck off from the busy presses of Southern Europe during the early half of the Cinquecento were three sets which for different reasons lie practically beyond the reach of collectors — *libri inter rariores longe rarissimi.* They were separately prepared for the printing by three men whose names will forever be linked in the written history of medicine — men of nearly the same age whose paths crossed in various ways, though one was born a Spaniard, another an Italian, and the youngest by a few months, a Fleming.

The first of these three books, if book it may be called — the six anatomical tables of Vesalius — represents the faint dawn of a new era in our knowledge of the human body. Printed in Venice in 1538 these fugitive sheets must have become literally thumbed out of existence, for only two complete sets and a fragment are known. One is treasured in the Library of San Marco; the other fell into the

hands of Sir William Stirling-Maxwell and remains in the possession of his son. The fragment, a single sheet, was found by the late Gustav Klein of Munich and supposedly will find its proper home in the re-established library at Louvain.

Another of the three — the "Christianismi Restitutio" of Servetus — was published fifteen years later in Vienne, and though it contains certain paragraphs setting forth for the first time the novel idea of blood passing in a circle, thereby anticipating the pulmonary circulation of Harvey by nearly a century, it was not for this heresy that Calvin caused both author and book to perish at the stake. Of this work also two intact copies and a fragment alone seem to have survived. One is in the State Library at Vienna; another, according to tradition the prosecutor's copy snatched from the flames, came through Richard Mead to the Bibliothèque Nationale in Paris; an imperfect copy wanting its first pages is in the Library of the University of Edinburgh.

The last of these three books, though issued without printer's mark, place or date, we now know to have been the second in chronological sequence, and though less rare than the others it nevertheless is sufficently so to justify its being

coupled *inter rarissimos* with the others. Projected as a noble work, it too had a tragic end, for nothing can be more tragic than for a work so conceived to be suppressed at birth by its author. Choulant had knowledge of only four copies, and though it will be shown in later pages that others have come to light it still remains among the rarest of the early illustrated anatomical treatises. So to John Calvin we owe the rarity of one of these books, to the process of handling the practical disappearance of another, to deliberate infanticide the near-extinction of the third.

The young of all times have rebelled against the shackles of tradition, but in no age did these shackles hang more heavy than at the beginning of the sixteenth century. Those imposed by the Church were no less burdensome than the dogmas that shackled Medicine, but to the aid of the rebellious youths of that day had come the printed page: and the presses having done their duty for fifty years in reproducing and multiplying the works of authority were now, some of them, being utilized for the dissemination of revolutionary, nay heretical ideas. So Vesalius with this new weapon toppled Galen from his seat, and in the process, before his end, ran counter

to the church. What Servetus might have done for medical science we can only conjecture had he not chosen with ineffective disguise to tilt in theological lists over man's soul rather than openly to use his lance in the no less controversial matters relating to his body.

These two, the Spaniard and the Belgian, Michael Servetus Villanovanus and Andreas Vesalius Bruxellensis, first met as young men, fellow prosectors, in Paris under Guinther of Andernach, and this Guintherius, not many years later in making acknowledgment to them (1) mentioned Servetus in particular as one " distinguished by bis literary acquirements of every kind and scarcely second to any in his knowledge of the Galenical doctrines." The third, the Italian, Giambattista Canano, a Ferrarese, like the other two came of a good family, had distinguished forebears, and was an equally precocious youth eager to blaze a new trail in his chosen profession. But his was a spirit of milder order, not, it would seem, from fear of opposing authority but rather from the want of those none too agreable qualities in his make-up often possessed by rebels, those who do. In later years as papal physician he ran no such risks as the other two, and what-

(1) *Institutiones Anatomicae.* Basel, 1539.

ever may have been the Vatican's attitude as regards the tragic incident at Geneva, it is probable that Canano would have had small sympathy with Servetus had they ever met. Certainly when Canano's path crossed that of Vesalius while in their twenty-seventh year, and it became apparent that the energetic young man from the low-countries had anticipated and outstripped him in the pictorial representation of actual human dissections he withdrew, with what disappointment is not told, and left to his rival the acknowledged fatherhood of modern anatomy.

Unquestionably we may see Canano through the cool haze of time as the pleasantest figure of the three, for the restless stuff that reformers are made of is hot to the touch. He was impassioned by no such flame, and one may imagine that when he saw himself forestalled he warmly praised the Calcar drawings cut on wood that Vesalius spread before him, and made little show of the no less remarkable figures by his friend Girolamo Carpi, the first series of which, portraying the muscles of the arm, had by now been struck off from their copper plates. Vesalius was the Luther of medical science; Canano an Erasmus.

But with all that the "Fabrica" of Ve-

salius did for anatomy as a whole, one must look hard to find his name attached to any single structure, and he made light of the trifling muscle the painstaking Canano discovered and described. Nor did he appear to catch the significance of the views on the circulation held by his former co-worker Servetus. Had he done so and had he heeded Canano's statement on that memorable meeting at Ferrara that there were valves in certain veins which directed the flow of blood, he might have done as much to overthrow the physiological views of the great Pergamite as he had done in superseding some of his views on the fabric of the human body. For this the world had to wait until the valves were rediscovered, until the De Motu Cordis was written and until the microscope gave the final confirmation.

GIAMBATTISTA CANANO

BIOGRAPHICAL NOTICE

BY

EDWARD C. STREETER

Giambattista Canano was born at Ferrara in 1515, a few weeks, or at most a few months, after the birth of Andreas Vesalius. 1515 was the year in which Leonardo, anatomizing at the Santo Spirito in Rome, was forced by papal command to discontinue his dissections. A unique and incomparable personality who had had a unique and incomparable contact with the entire sum of things anatomical, dismissed, by a gesture, from the ampler employments of his powers! Providence straightway, in that year, provided two competent heirs for Leonardo, — in case one would not do; and from very excess of precaution, produced Realdo Colombo in the following year. But Canano, the « Vesalius alter » of Italy, was destined to touch only a very meagre portion of the prepared heritage, for reasons which may be drawn from the uncertain notices of his life which we still possess.

The Greek forbears of Canano settled in

Ferrara in the time of the late Paleologi. It is likely that the date of their coming was prior to the Ferrarese Joint Council (1438) of the Greek and Latin Churches. It was pre-eminently a family of medical men; of the eight Canani on the roster of lecturers at the university of Ferrara, five are physicians. One had already shed particular lustre on the name. Giambattista Canano, the grandfather of the anatomist, had possessed an individuality and mental endowment far out of the ordinary. For he had risen, in a very brief space of time, from an inferior employment on the medical faculty (1) of the local "Studium generale" to the conspicuous rôle of court-physician to Matthew Corvinus and his queen Beatrice of Aragon. His long service at Prague and Pest brought him much honor. In the field, in attendance upon the illustrious adventurer his master, he, a Greek, must have sensed a fierce satisfaction on beholding the Turkish hordes hurled back by the troops bearing the black device of Corvinus. At court, in intervals of quiet, this

(1) His name appears on the salary list of 1473: "A M. Zohanbapista da Canan per la lectura de Loica predicta a mezo die lire cinquanta", BORSETTI, *Hist. Ferr. Gymnas.* Ferrara, 1735, vol. L., p. 95. On the old Marchesan lira, consult V. BELLINI, *Dell'antica Lira Ferrarese.* Ferrara, 1754.

native Hellenist took advantage of his close association with the mighty book-hunting potentate and his librarian Taddeo Ugolete of Parma, to collect by transcription, purchase or by other means a goodly store of medical manuscripts.

He had two sons, Ludovico (1485-1556) and Hippolito (1494-1559), between whom his possessions and his books were divided. The elder son, father of the anatomist, was a man of affairs, " mira in rebus agendis facultate ". (1) This Ludovico took to wife Lucrezia Brancaleoni. The son born to them in 1515, christened Giovanni Baptista after his grandfather, was dedicated to medicine. Young Canano (2) received his education at Ferrara. The University, or Studium, as it was then styled, invested with a splendor which the prophetic labors of Leonicenus and Manardus had brought upon it, could now cancel and forever blot out the name of scorn, " Asylum of the destitute ", which youths

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(1) The phrase is Canano's: see epitaph to his father and uncle BORSETTI, *Hist. Ferr. Gym.*, Vol. II, p. 66.

(2) On Canano see Virgilio Ducceschi's recent notice in " Gli Scienziati Italiani " edited by Aldo Mieli, Rome, 1923, vol. I, pp. 285-292. We are deeply indebted to this author. His full and brilliant account covers every aspect of the Opera, and the essentials of the Vita, of Canano.

of an earlier day libelously attached to it. In all likelihood Canano's studies were largely directed by his uncle, for Hippolito was an eminent figure on the Faculty: « ac Medicinam, magno Studiosorum concursu professus est ». His master in the liberal disciplines was the humanist G. C. Giraldi. This philosopher, physician, historian, orator, poet and Ducal secretary had been a pupil of John Manardus in medicine, of Calcagnini in rhetoric. Besides the « Heccatomiti », numerous commentaries and orations, he wrote a singular tract on anatomy in heroic verse, « De humani corporis partibus ». Canano's chief instructor in medicine was the exalted Antonio Musa Brasavola, now at topmost pitch of fame, in whose following were students from all the states of Europe, from Coimbra through to Posen, from Oxford down to Pest.

For his rich initiation in anatomy Canano was beholden to his close kinsman Antonio Maria Canano. Antonio had been schooled by Marcantonio dalla Torre at Padua; was with him, indeed, in 1510 at the very time when dalla Torre was establishing contact with Leonardo (1).

(1) ANTONELLI GIUS., *Indice dei Manuscritti della Biblioteca di Ferrara*. Ferrara, 1884, p. 234. For dalla Torre

It appears that the Paduan-trained Antonio, on his return to Ferrara, stabbed his kindred awake and brought in the revival of anatomical studies, now obsolescent.

Previous to 1535 the Studium of Ferrara had set a deplorable example in respect to anatomical teaching, — no worse, however, than conditions obtaining in the Paris schools up to that date. The rare school — dissections, instituted at Ferrara at the close of the fifteenth century, were ripping affairs, little calculated to profit anyone save the Lector, Ostensor and assistant barbers. The operators had a basis for drawing pay, the boys had a holiday — and that was all. It is true that Leonicenus (1428-1524) twice mentions anatomies, as substantiating certain corrections he had made in the texts of Pliny and Celsus, but this rather indicates a dearth of dissections, paucity rather than plenitude. Neither Manardus nor Brasavola paid heed to the matter, although the latter avows he opened two stags in search of a heart - bone to add to his Museum. (1)

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see P. Jovius, Elogia. XLIX: « elaborat is profitendo simul secando damnatorum cadavera anat. volumen ex placitis Galeni ».

(1) « ego duo corda cervi aperui ». BRASAVOLA, *Exam. omn. simp. med.* Lugd. Frellon, 1537, p. 416.

It should be noted that Berengar of Carpi died at Ferrara in 1530 within the shadow of the studium. This event marks the passing of the old order of anatomist, the "three day men" who variously quartered the cadaver but never flayed it, who consequently had only the most meagre notions of myology. "I have made very little comment on the muscles of the body" says Berengar, (1) then, in extenuation, adds, "I have concerned myself very sparingly with this system; mainly for the reason that, in the ordinary dissections made before the scholars in the schools, the majority of the muscles cannot be demonstrated. In order to properly expose these structures to view, extremely long and painstaking labor is required, as well as a suitably appointed room". This was the labor which the Canani undertook, to fill this gap (which the artists of the period were so impatient to have filled), to recreate and reinstate in the school a myological discipline more closely observed, more inclusive than Galen's. Vesalius and Estienne were in the act of taking possession of this field by seizin, at this same moment. Vesalius in 1536 made essay in Paris

(1) *Commentaria .... super anatomia Mundini*. Bologna, 1521, p. 516.

to demonstratate the muscles of the arm and hand: " musculos manus cum accuratiori viscerum dissectione conatus sum ostendere " (Fab. 1543, p. *3a, 32). This sort of labor, he adds parenthetically, nonplused the common prosectors of his day, reduced them to hopeless perplexity. Precisely at this juncture then, in an age untutored in the finer relations and structure of the muscles of the body, the Canani began operations. In Giambattista's home they found the " suitably appointed room ", the " ita locus accomodatus ", which Berengar deemed so essential, and there began, with audience " fit though few ", an audience that included Vesalius' own brother Francis, Iacopo Antonio Buoni (to whom Canano gave the particular copy of his *dissectio* herewith reproduced), the youthful Arcangelo Piccolomini and others. (1)

As a powerful furtherer of these studies, stands out the tutelary patrician figure of Bartolomeo Nigrisoli, an old medical alumnus of the Studium. In the seventies of the preceding century his father had been a high-salaried master on the medical faculty with the grandfather of Canano, in the days of the brothers Zirondi, Francesco Benzi, Castello and Leonicenus. The

(1) Ducceschi, *op. cit.*, p. 285.

houses of the Nigrisoli and Canani were in good accord. Bartolomeo, become deeply interested in the reformation of anatomy, reposed all his hopes on the Canani. Often did he, in their presence, dilate on "the necessity and utility in medicine (particularly in the operative arm) of a knowledge of anatomy grounded, not alone on the testimony of Galen, but on what one may see and study objectively with one's own proper eyes". (1)

Here is a sturdy forward-looking precentor who will not compound with Galen; one whose discourse ill-accords with the teaching of Sylvius: "Neque credas ad has Galeni anatomicas descriptiones ubique exactissimas et verissimas quicquam posse etiam maxima doctissimorum industria accedere". (2) Thus Paris would pinion, Ferrara release, the operation, the motion of the spirit, in the year 1539. How favorable for the moment was the situation at Ferrara, we may learn from Amatus Lusitanus: "If anyone wants to get a perfect training in botany or the fun-

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(1) CANANO, *dissectio,* ded. epis., (Sign. Aii).

(2) SYLVIUS, *Ordo in leg. Hipp. et Gal.* Paris, C. Wechel, 1548, p. 13. Both sayings date from 1539; we quote a late edition of Sylvius, not having the first edition at hand.

damentals of sound medicine I advise him to go to Ferrara. For the Ferrarese physicians, " coelesti quodam influxu favente ", are the best informed men in the land, the most diligent, too, along all lines of natural inquiry. For that reason I personally have never once regretted my sojourn of six years among them " (1542-8). (1)

We do not know at what date Giambattista attained the doctoral dignity. He followed a deliberate unhasting course. Certain it is that by the year 1540 he was a ripe and accomplished anatomist. With zest for his work, " in sacra medica amore ", he weighed the testimony of Galen against the evidence of his own eyes. He knew the Greek and Latin Fathers of medicine excellently well, for he had inherited a rich library. The pulling down of many tomes, the consulting of many texts in sleek codices and on the printed page, is implied in his phrase " multaque ab antiquis iam pridem litterarum monumentis tradita ". (2)

In 1541 at the age of 26 Canano succeeded Antonio Maria Canano in the chair of anatomy at Ferrara. His kinsman, in resigning the pre-

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(1) Amatus Lusitanus, *In Dioscoridis....enarrationes.* Venetiis, 1553, p. 374.

(2) Candido lectori, at end. Facsimile fol. 4 verso.

ceptorial function, lost none of his ardour for "the science of the sepulchre", for we find that he dissected until 1553. (1) It is quite in reason to suggest that Antonio withdrew for the purpose of advancing Giambattista and, to that end, hit on some specious pretext for self-effacement. The man was not old, and although it is true that he had taught in one capacity or another for eleven years, he was not through. It looks like an allowable case of nepotism. Over and around Giambattista all his days, is seen this circumambiant play of affection. The warm esteem, the ever-deepening regard in which he was held and surrounded are merely the refluent waves of affection which had origin in the heat at the center of the man himself. The devotion of his friends bespeaks his own goodness of heart, candour of mind, deep integrity and constancy toward them. It can signify no other thing. The erudition of this man was highly leavened, retrieved by a winning geniality, a losing honesty, a gay humor (both Vesalius and Falloppio refer to his sense of humor). Canano's friends at this time included a number of the *litterati,* both among the older men like Calcagnini (1546), and younger blades like Agostino Mosti and the

(1) Borsetti, *op. cit.*, vol. II, p. 156.

men of Giraldi's circle. Canano was a man of most varied culture. As Falloppio describes him, he was one who knew how to combine uncompromising probity with extreme kindliness of spirit, competent in a most comprehensive sense, by every intimation of his being, except in the direction "ad fingendas fabulas". Eliminating from the estimate of Falloppio a moiety or all of those extravagancies suggestive of personal puffery, we may still believe that Giambattista possessed human excellencies, charm, learning, truthfulness enough and to spare. Not a paragon, it may be, but a forthright determined seeker after truth, an amiable modest scholar, alive to the amenities, as well as to the duties, of life.

Upon assuming his professorial rôle or very soon thereafter Canano began issuing, in parts, a volume on anatomy. The first fasciculus of this work, dedicated to Nigrisoli and printed presumably at Ferrara, appears to have come off the press before the summer of 1542. As it is bare of dates or clues to the probable date and place of issue it presents one of the most vexing dilemmas known to medical bibliography. With a modicum of text, a model of compressed statement, with a brilliant series of twenty-seven illustrations and some dedicatory matter, Canano

made a partial revelation of his purpose and of his power. For a brief hour he was protagonist in the unfolding scene. The "Dissectio", anticipating Vesalius, represented in a very exact manner the muscles and bones of the upper arm and forearm. It revealed a technique hitherto unattempted. It revealed the winnowed thought of a new type of expert, attentive to punctilios, true to himself, free from the thraldom of Galen. Canano states in his preface that he is on the point of publishing the remaining portions of his work and that these remaining books (? five in number) are already in press, "sub calchographi praelo iam positos". Then some untoward event occurred which caused him to suspend publication and suppress Part I already issued. What had happened?

It is known that Vesalius, after finishing his Fabrica at Padua August 1, 1542 and his Epitome on August 13, went to Venice at the end of August and was there engaged with Stopius, for a brief time, in packing his manuscript, woodblocks and trial-proofs of his illustrations to send them off to the Bâle printing house of Oporinus. Roth (1) supposes that very shortly thereafter he turned down to Ferrara to

(1) M. Roth., *Andreas Vesalius*. Berlin, 1892, p. 127.

visit Canano, having already seen Canano's book. There is another reason for this visit, which escaped the all-seeing eye of his biographer, his beloved brother Francis was there, assisting Canano. Vesalius was about to leave Italy. It is pertinent to put the question—when could Vesalius have touched Ferrara if not at this time? We know he went,—it was there he saw the dark-skinned diver who could stop breathing for an incredible length of time. No other date for this visit is conceivable, scrutinize the itinerary of Vesalius as closely as you will. Between the end of August, then, and the end of November 1542 (for Vesalius was in Bâle by the opening of year following), the "Man of wrath" from Flanders spread before the eyes of his competitor in Ferrara the trial-proofs of the wood-cut illustrations to his Fabrica. It was a dark hour for Canano, beyond denial. He saw that he had been hopelessly outdone; in conception, scope, execution, as in color, pomp, intimacy and power. Yet with good grace, we believe, he consigned his own work to destruction, thus doing first homage to Vesalius. A few, a precious few copies of his fasciculus had passed beyond recall or were allowed by him to remain in the hands of friends. There came

a day when Vesalius also turned and burned the work of his hand, but from no such generous impulse.

It is injurious to the name of Canano to assign pique and disappointement as the direct motives urging him decisively to quash his publication. A different construction of his act would seem more consonant with character. Incapable of lying, as Falloppio said, he did not delude himself. Confronted by facts he did not wriggle or evade. He knew the hardest declensions in the grammar of assent. He slew his child, as Abraham would have done, in dutiful reverence, in witness and confirmation of the proven superiority of Vesalius. Chivalry was not extinct, nor was its code a dead letter, in the Canano *gèns*. Giambattista followed in the footsteps of his namesake, physician to the most valorous and just knight in Christendom. The imputation that Vesalius, " ex suo furibundo Marte " could o'ercrow the spirit of such a man is as paltry as it is derogatory. These are harsh adjectives, but used advisedly, to depurate a good man's fame.

In the course of the following year (1543) Canano entertained another extraordinary visitor, Dr. John Caius of Norwich, who lived with Ve-

salius for eight months at « Cavalle » near the Ponte della Paglia at Padua, when Vesalius was drafting his « Fabrica ». Caius fresh from the forming hands of Montanus, had been lecturing on Aristotle at Padua. He came to Ferrara fired with high ardour for a new project which he had in mind — the recension of various Galenical treatises. His interests at this time centered on manuscript collections of Greek and Latin classics of medicine. He knew where to seek his prey. Ferrara, cradle of humanism, where for sixty years Leonicenus had taught the gentle art of textual castigation, was, like Paris a city of books. Years later in England Caius remembered his rewarding visit to the library of Giambattista Canano. (1) It stood out in his memory as one of the six major private collections in Italy. He also includes in that select list the library of Canano's uncle Hippolito. So, even in their divided state, the codices brought back from Hungary by the founder of these two libraries appealed to John Caius as brave plunder. The priceless Estense collections housed in the Rigobello tower of the Castello, the huge library of Caelio Calcagnini which, after his death in 1546, filled fifty-six armaria or book-stacks in

(1) Caius, *de libris propriis liber.*

the « amplissima bibliotheca » of the Dominicans, held little that interested him. He explored, however, the collection of Canano's instructor Brasavola and that of Bonaciolo. Ducceschi (1) is prone to believe that the tragic blow dealt to the high initiative of Canano probably had the effect of dissuading him from further studies in anatomy. But surely he cannot conceive this effect as supervening at once. To quit his post after one scholastic year of work (from the Feast of St. Luke 1541, to the same, 1542), would have been possible only on grounds of ill health. Vesalius had overthrown his projected « thèse doctorale », it is true, but not his character. Incontinently to vacate a position which he had coveted, without an excuse that he dare allege before the Rectors, is quite out of keeping with his character, betokens, in fact, an instability, an inconstancy of action alien to his nature. The particular interests which engaged his attention during the decade 1542-1552 are altogether unknown to us, with the exception of his « Hofdienst » in 1546. It is highly probable, however, that he continued in the Chair of anatomy until 1545. In 1548 at Ferrara, he « communicated » (perhaps demonstrated) his disco-

(1) *Op. cit.*, p. 288, col. 2.

very of the palmaris brevis to the young Falloppio. Canano is styled « anatomicus » in all four instances in which his name is mentioned in contemporary literature.

So profoundly sealed and secret are the important issues of his life that we do not know the date of his most notable discovery, that of valves in the veins. In the preface to the reader he says that in the course of his work he has made several discoveries capable of wide application in medicine. This is a pregnant phrase in view of the fact that he who wrote it is the discoverer of valves in the veins. Manifestly the phrase is too vague, of too wide an application, to waylay us. The first direct reference to this epochal discovery is found in the following statement of Vesalius:

« At Regensburg (in 1546) when I attended in consultation with Canano the sick Lord Francesco d'Este, he informed me that he had observed, in the lumen of the azygos and renal veins, and in those veins that overlie the upper portion of the os sacrum, membranes like those guarding the orifices of the vena arterialis and the great artery — and these, he asserted, opposed the reflux ot the blood ». (1)

(1) VESALIUS, *Fall. Exam.,* 83.

Canano's tour of duty with a nobleman of the suite of Charles V carried with it a unique compensation—a vivifying intercourse with many great physicians, as yet known to him only by fame, who were gathered at the Imperial Diet at Regensburg. Crato of Craftheim describes a similar occasion later: "When I attended the Augsburg Diet in 1582, I had an opportunity of becoming acquainted with some of the outstanding physicians of the Princes and the cities. I wish you had been there with me, for there were consultations no end, both in public and chambers." (1) In connection with the consultation between Canano and Vesalius the inescapable comment is this: Had Vesalius verified, and treated in a generous and ampliative manner, the findings of Canano, and given them due weight in his edition of the Fabrica of 1555, the world would not have waited until 1628 for a Harvey.

The incumbent of the chair of anatomy at Ferrara in 1548 was Gabriele Falloppio, a young man of twenty-five, of rare skill, who, in an age of foaming and bespittled anatomists, maintained a heart of unfailing affection for his mentors,

(1) Jo. Cratonis, *Consil. et Epist. med.*, (1671) Bk. II. p. 377. Roth, *Vesalius*, p. 208, note 1.

past and present. Canano stood as friendly advisor to him in that year and he never forgot his kindness. As they were true men both, nothing could happen, as we shall see, to disrupt the bond of sympathy which existed between them. In this "amicitia Piladea", only the part played by Falloppio appears.

In 1552 Canano was called to Rome by Pope Julius III and appointed Archiater, or Palatine physician, succeeding Brasavola, his old instructor. This was his apogean hour. Rome was agog with mundane pageantry, and werily with men of genius. Indeed Canano must have been much in company with Michaelangelo, Vasari, Jacobo Sansovino and Vignola at the Villa di Papa Giulio, the Casino and other noble constructions which Julius had in hand. The Pope had retained as architect of his renowned Belvidere in the Vatican, the selfsame artist that Canano had employed to make the illustrations of his "picturata dissectio". (1)

Doubtless one of the first men he met was the professor of anatomy at the Sapienza. Eustachius happened at this moment to be engaged with the engraver Giulio de Musi in putting to

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(1) *Girolamo da Carpi,* on whom consult. *A. Serafini,* G. da Carpi. Rome, 1915.

a severe test Canano's idea of employing copper plates in lieu of woodblocks as the proper medium for graphic anatomy. Eustachius duly noted the palmaris brevis muscle of Canano (in plate XIV, Lancisi-Eust., Tab. anat., Amsterdam, 1722) in 1552,—the earliest confirmation of a discovery now ten years old.

Canano spent three strenuous years at the Papal Court. We gather from the following circumstance that he stood high in the affections of Julius and his brilliant circle. Falloppio, called to Rome from Padua to attend the Pope's brother Balduino del Monte, for a mad moment cherished the hope that it would please God to exalt him to the office of Palatine physician, superseding Canano. (1) It pleased neither God nor his Vicar on earth to do any such thing. Falloppio returned to Padua and to the profession of anatomy and botany with vastly increased respect for the "integerrimos mores" of his friend, whose warm protestant he never ceased to be thenceforward. The pleasure-loving Pope, over-active in bestowal of benefices, invested our Canano, hound of science, with the Bishopric of Ficarolo and other irrelevancies. Julius III died March 23rd 1555, aged 68.

(1) DuccESCHI, *Op. cit.*, p. 287, citing Tiraboschi.

His physician, after some meet delay spent in dutiful observancies, returned to Ferrara.

Canano's predestinate discovery of valves in the veins was now receiving some notice. In 1555 Vesalius, vaguely, and Sylvius, in good set terms, signalized the existence of multiple valves in the veins, though of course neither mentioned the name of Canano. It was with some inner satisfaction and some smart that Canano read the closing paragraph of chapter 4, book III in the new edition of the "Fabrica." If Vesalius were grudging and obscure, there was no mistaking the meaning of Sylvius: "Membranae quoque epiphysis in ore venae azygi, vasorumque aliorũ magnorum saepe, ut iugularium, brachialium, cruralium, trũco cavae ex hepate prosilientis". (1) But a fly was in the ointment. Four years before, Amatus Lusitanus had published a screed addressed to Vesalius relative to the venesection controversy in which he had undertaken to explain to Vesalius the function of the "valve at the orifice of the azygos". This valve, he claimed, absolutely opposed the flow of blood from the azygos into the cava. This view, based on a dozen dissections of human cadavers and animals performed before competent observers at

(1) J. SYLVIUS, *Isagoge*. Paris, 1555.

Ferrara in 1547, was in full accord with previous experiments carried on by Canano, "admirandus anatomicus" (1) Thus he involved the name of that silent man in his own egregious blunder and confusion. Vesalius, taking fire, flouted the idea,—a horror! away with it! a base, vicious figment of the man's fancy! (2) Franciscus Valesius (3) was scathing: "Amatus", he said, "has contrived a novel hoax 'in re evidenti', hoping to impose on our credulity". Eustachius (4) too added to the clamor of dissent: "Certain anatomists of the day, to the great amusement of us all, are claiming that valves exist in the azygos at its termination in the vena cava".

In the center of this storm stood a Portugese Jew who desired least of all things to harm Canano. He had repeatedly found the valve, and had explored its function in a beautiful series of experiments, probably inspired by Canano. Four years later, in the heat of argument, he shifted its position to the orifice and placed

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(1) Amatus Lusitanus, *Curationum medicinalium centuriae VII.* Florent., 1551, Curatio LII, scholia.

(2) Vesalus, *Fabrica,* 1555, Lib. III, cap. 4, last sentence.

(3) Franc. Valesius, *Controversiarum* .... libri X, Compluti, 1556.

(4) Barth. Eustachii, *Opusc. anat.* Venet., 1564.

it upside down with care. Amatus could cry "mea culpa", but it was too late. Neither Vesalius nor Eustachius, each of whom had done special work on the azygos, were able to find valves in that vein at any point. Nor could Falloppio. He could, however, find the grace to defend his friend, the while he belabored Amatus. His comment is worth quoting; Falloppio after describing the "falso addita" of Amatus, that is, the azygos valve, continues: "now Amatus affirms that this was demonstrated to him by the noble anatomist Giambattista Canano, and that he himself corroborated it in twelve dissections of human cadavers and in a like number of demonstrations on animals. I wish, my dear Peter (Petrus Mannus of Cremona), that you knew as well as I do the unsullied probity and flawless teaching of Giambattista Canano. Then you would realize that that man's capacities fit him for any job you can name save one — the forging of lies. Nor would you then believe that this notion ever originated with him — unless, possibly trifling with those who were present with Amatus, he pulled it over them as a joke. As a matter of fact these valves have not been found, either in man or in the lower animals, in my own series

of dissections. Canano could not have been so inept as to fail to note, in his sections of the azygos, the obviously clear, patent, unobstructed outlet of that vein. I throw the entire blame of this error upon Amatus who, though generally prudent, in this instance has neither observed nor interpreted his anatomy as correctly as it was correctly expounded to him by Canano ". (1)

Canano was an infant when the Brissot controversy burst forth, this war of words lasted throughout his lifetime. It filled the entire corridor of medicine with noise of loud and confused wrangling; with a din that rent the heavens, a clamor that confounded the faculties. In the prevailing welter and disorder the main issue of Canano's work—the question of venous valvulae in the large, dwindled to very small size indeed, to a search for an orificial valve in the azygos. This search relinquished, there soon came an end to searching for valves in general. Through successive diminutions of substance the teaching of Canano and the words of Sylvius grew fainter and were lost. The valves were forgotten. " Selbst die Sage davon ist verschol-

(1) G. Falloppii, *Observ. anat.*, Parisiis, 1562, p. 74 (1st ed. Venice, 1561).

len ". In 1574 Fabricius of Aquapendente must needs rediscover the valves, proclaim them his inventum novum, at Padua, five years before the death of the immutably silent man of Ferrara.

Ludovico Canano died in 1556, aged 71, shortly after his son's return from Rome. Hippolito followed three years later. Giambattista and his medical cousin Jacobo joined in raising to their memory a cenotaph in the sacristry of the church of St. Dominic. (1)

The last two decades of Canano's life were apparently spent in public health service. Under the Duke Alphonso II (1558-97) he was appointed Protomedicus of the entire dominion of the House of Este, his bailiwick as chief-physician stretching half-way across Italy. The Duke (under advice of Canano, it would appear), improved the living conditions in the *contado* by constructing a network of drainage canals 205 miles in length. His Protomedicus was not idle. He left a record of accomplishment of which he was unwontedly proud. Not idle, nor forgotten. In 1564 Cuneus, an anatomist of Milan and Pavia, seized the pen in defense of him who never made a motion to defend himself. In a pro-Vesalian attack on the blind

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(1) Borsetti, *Hist. Ferr. Gym.* vol. II, p. 66.

Galenist Puteus, he invokes the name of Canano as one of the emancipated who stood aloof from the general run of mankind in his great refusal to go down in craven submission to Galen. He honorably coupled Canano's name with the two greatest in anatomical annals: " Cananum etiam, in eadem cum Falloppio esse sententia, tum ipse Falloppius scribit, tum Canani ipsius quam cum Vesalio saepius habuit familiaritas, tum horum non dissimiles in secando docendoque opiniones, coarguunt ". (1)

The epidemic pleura-pneumonia of the year 1564 and the four successive years of pestilence 1574-77, not to mention minor outbreaks of contagion, drew heavily upon the resourcefulness and courage of a man in Canano's position. Here, too, in theory and practice Canano doubtless stood with the *illuminati*, with that keen-

(1) GABRIELIS CUNEI, *Mediolanensis Apologiae Francisci Putei pro Galeno in anatome examen.* Venet. 1564, pp. 1-2. This was published with Vesalius' Fall. exam. and was generally held to be the work of Vesalius. Douglas, Haller, Boerhaave, Albinus, Sprengel, Tollin, Haeser, Martine, Ludeking and many others have been of this opinion. The theory originated with Jerome Cardan in 1643; it was not disproved until 1892 when Roth (Vesalius, pp. 342-346) produced sound reasons for discarding it. F. M. G. de Feyfer (Janus, Dec. 1914, p. 503) accepts Roth's disproof.

eyed chronicler of Florence, Benedetto Varchi and with Fracastorius of Verona.

On the 29th of January, 1579, now in his 64th year, Canano passed away in the city of his birth. The lines inscribed on his tomb in the sacristy of St. Dominic are his own:

D. I. | IOANNES . BAPTISTA . CANANUS . IULI III . PONTIFICIS . MAXIMI . | MEDICUS . OLIM . ACCEPTISSIMUS . NUNC . AUTEM . TOTIUS . | DITIONIS . ALPHONSI II . FERRARIAE . DUCIS . SERENISSIMI . | SUIS . MERITIS . PROTOMEDICUS . MORTALITATIS . MEMOR . HOC . | SIBI . MONUMENTUM . VIVENS . | P. C. A. D. MDLXXVIII . | CALENDIS . IANUARI . | AETATIS . SUAE . LXIII .

NOTES

The "Dissectiò": The date of issue cannot be regarded as indeterminable while so much yet remains to be done. The printer has not been identified, a close study of the type-forms, paper, impression, etc. has not been attempted. The industry of Serafini has brought out the fact that Canano's illustrator was at work on the drawings in 1541. The copy of the Dissectio in the Brera bears a manuscript date of 1541. There is no gross abuse of the privilege of guessing involved were we to assign that date for the appearance of Canano's work, basing our guess solely on the data given by Ducceschi. Barring Serafini's wit-

ness, drawn from dates in the life of the artist, there is no closer indication of the date of issue of the Dissectio than the following: When Fallopius called the attention of Vesalius to the fact that the latter had failed to mention the palmaris brevis of Canano in his Fabrica, Vesalius retorted: " I saw those pictured muscles before issuing my Fabrica ". If this is any sort of answer at all Vesalius hereby implies that he had seen Canano's Dissectio at a time when, still in possession of the manuscript of the Fabrica, he could have inserted the palmaris brevis in his work had he chosen to do so. As Vesalius completed his work Aug. 1, 1542 we must place the Dissectio some months earlier than that date, possibly in the preceding year. (Vesal. Fall. Ex. 71.—Falloppii observ. anat. 1562, p. 65).

The illustrator: The illustrations were prepared by Garofalo's pupil Girolamo Da Carpi who worked in Ferrara from 1537 to 1548, painter and architect of unquestioned ability: " pictorem nostro aevo non minus diligentem, quam insignem ", as Canano affirms. Serafini regards the plates in the Canano book very highly, " among the most artistic anatomical cuts produced within the century ", establishing Girolamo as one of the ablest masters of design, " imbued as it were with the spirit of Leonardo ". He reproduced the entire series in his monograph. The thin almost transparent paper used by the original printer was poorly adapted to take the impression ot these plates. What with off-sets and skimped press-work the ef-

fective quality of Girolamo's art suffers severely. The work of engraving the plates Girolamo doubtless left to some other hand. Choulant is in error in attributing them to the famous Venetian engraver Agostino de Musi. It seems that Haller saw in Gesner's copy of the 'dissectio' a manuscript note to the effect that Gesner had received this book in 1543, "ab Augustino de Musto Ferrariae missum est". Choulant has confused de Musi with Agostino Musto (Borsetti spells it Mosti), a member of the literary circle of Ferrara. This Musto was the friend of Calcagnini, Alciati, Giraldi and Canano. It was he who sent Gesner the book. We are therefore still in the dark as to the engraving. The particular copy here reproduced in facsimile was given by Canano to his friend Jacobus Bonus (autograph on title). Jacobo Antonio Buoni was a fellow student with the author under Brasavola, and present at Canano's dissections. Buoni, like P. Beroaldus, wrote a treatise on earthquakes. He also wrote a dedicatory epistle prefixed to Brasavola's index to Galen, in which he dressed a list of the works of his old instructor. He taught in the University in 1551,—whether medicine, or theology, we do not know. He was good alike in both faculties. He died Aug. 12, 1587 (Borsetti, Vol. II).

The *musculus palmaris brevis* was accepted by anatomists only after long hesitation. Galenists, and in fact most of the Vesalian faction, gave it grudging place until Falloppius insisted upon its adoption in

1561. He described it with nicety (Observ. anatom.) adding this relative to Canano: "This, however, is not my discovery but that of Giambattista Canano, a physician of Ferrara, a man who, without the least question, is to be numbered among the very forerunners of anatomy; second to no other in erudition, integrity and courtesy. This most distinguished anatomist communicated his discovery to me while I was professor at Ferrara, now thirteen years ago (1548) and I, afterwards at Pisa, and here in Padua, acclaimed it so publically that it easily should have reached the ears of all. The first comment on these muscles in published form was made by Valverde in his anatomy in the Spanish idiom" (1556). It appears from this that Falloppius never had a copy of the Canano Dissectio in his hands, despite his close association with the author. Valverde unquestionably derived his account from Realdo Colombo. The latter had taken the discovery to himself: "Mark this muscle" he says, after describing it, "Mark it well, for none of the ancients knew of its existence, nor did Vesalius" (Colombo, De re anat., Venetiis, 1559, Bk. 5, p. 161). The Eustachian engraving depicting the palmaris brevis, though finished in 1552, was not published until a century and a half later. The short palmar muscle is but one of many which found first adequate representation in Canano's work—a work "minuscule mais formidable". The short flexor of the thumb, the interossei, and adductor of the little finger had never been portrayed before with any

approach to verisimilitude. The myologic merits throughout are strikingly salient when we compare this work with what had gone before. Roth very unjustly belittles Canano's accomplishment (Roth, Vesalius, p. 208) in order to magnify Vesalius. He is consummately uncandid and unperceiving in his treatment of the man and his work. Morgagni, Haller, Sprengel, Choulant and many other competent critics of uncramped posture of mind have viewed the exact drawing and nicely observed anatomical detail of the Dissectio in a far more favorable light. The structures of arm and hand, it should be remarked, had intrigued the spirit of all anatomizing artists from the age of Donatello down to the latest mannerists in the following of Michaelangelo. Among anatomists the first to give close attention to this member were Vesalius, Estienne and Canano.

Valves in the veins: Although he left no written word on this head Canano constantly bent his mind upon the penumbral matter of the venous valvulae, for this was the discovery which he chose to detail to the great Vesalius, in 1546. Touching the history of these valves it is simpler to work back from Harvey. The third and final position taken by Harvey deals with the function of the valves in the veins, and this position confirmed, the circulation was demonstrated. In fact Harvey's, "scathless and complete" proofs of a circular motion of the blood followed so promptly on the heels of the rediscovery of these valves that he was to employ as his illustrator

the same craftsman at Frankfort who had made the copper-plates for the 1624 Fabricius. Harvey attributed the discovery of the valves to his teacher, "the venerable old man" Fabricius. Riolan, loving his Paris too well to let that pass, would have it that they were due to Jacobus Sylvius, another "venerable old man" of Paris. Since Riolan, Sylvius and Charles Estienne, have severally or together been accredited with the discovery. Let us weigh the claim for Sylvius: this incomparable organizer of studies opened his anatomical lecture courses in Paris in 1535, when he was nearing his fiftieth year. With his eyes closed to the actualities and pinned solely on Galen's "de usu partium" and "de musculorum motu", he gave little or no attention to what his barber-ostensor was doing. He was satisfied, in these first years, with the most utterly crude preparations, parts of animals and what not, if we may believe Vesalius. In angiology he failed signally, says Vesalius; was unable to find the valves at the orifices of the vena arterialis and aorta until shown them. Vassaeus, his Catalonian pupil, made a faithful summary of his teaching down to the year 1541 (in anat. corp. hum. tabulae quatuor) but the venous valves are not mentioned. Finally toward the close of his life he wrote the "Isogoge" in which he gave a lucid account of them, which account his brother published in 1555 a few weeks after the death of Sylvius. This was fully ten years after their discovery by Canano. Charles Estienne discovered valves in a portal vein as early as 1538, but valves

in the portal system are found only in the lower animals, not in man. Furthermore his observation was not published until 1545. It runs thus: "Porro autem, ne sanguis qui elaboratur in hepate, interdum regurgitet, facti sunt a natura quidam veluti exortus et apophyses membranarum, quae huiusmodi periculo obsint, quemadmodu in corde valvulae ad spiritus conservationem". (Stephanus, De dissectione... Paris, 1545, p. 182) Canano's disclosure of multiple valves in human veins (1545 or earlier) may have included other points of incidence than those mentioned by Vesalius, that is to say, more than the azygos, renal and crural valves. For Vesalius was reporting a conversation which had taken place six years before. He further had no great interest in the matter. Canano, too, could hardly have found time, in the course of a consultation, to enter into fullest detail; rehearsal of the thing seriatim was impossible. The impatient haughty physician of the emperor may have been a particularly unreceptive auditor that day. At any rate his account bears all the ear-marks of a scant abbreviated recollection. Realdo Colombo in 1559 reported valves in the mesenteric veins,—an error of observation. Salomon Alberti (1585) mentions the valves. Piccolomini (1586) speaks more fully of them, reminiscent of days at Ferrara with Canano. Then follows silence until 1602. The prime apologist for Canano in relation to this discovery is Morgagni, who devotes ten well-documented pages to his justification (Valsalvae Opera, Venetiis, 1740, Vol. II,

pp. 145-154). Haller (Elementa Physiol., 1757) adds assent: " Ita Canani, veri valvularum inventoris laus oppressa est".

J. B. Susius. We have been unable to determine in what way Susius stands related to Canano in his teaching. Sprengel says that the Aristotelian idea that the Vena cava has its origin in the heart, not the liver, was reaffirmed by Susius in public lectures at Ferrara in 1543. (SUSIUS, *De venis e directo secandis.*, Cremon. 1559, p. 60). Susius was from Mirandola and was a pupil of Brasavola. He seems, according to Roth, to have derived his ideas largely from Vesalius, at certain Bologna dissections made in 1539 (Roth p. 86, note 3). Susius wrote his work in 1544 but it did not appear until 15 years later, long after he had entered the service of the Prince of Carpi. He obviously had keen interest in anatomy in the years 1539-1544, and he was living at Ferrara most of this time, and inasmuch as Canano was practicing anatomy there continuously throughout this period, rapport between these two men was inevitable. Brasavola, in fact, speaks of the two in the same breath. The splendid talents of Susius he says, give promise of enduring fame and as for Canano, " Accedatis et vos duo Canani, Iacobe et Ioannes Baptista, iuvenes cum quibusvis nostra aetate in hac arte conferendi ". (Ant. M. Brasavola, in octo libros Aphoris. Hipp. et Gal. Commentaria., Basileae. 1541, epis. ad Gal. Gonzaga).

BIBLIOGRAPHY

L. Barotti. *Memorie istoriche di letterati ferraresi*. Ferrara, 1793, vol. II, p. 138.

F. Borsetti. *Historia almi ferrariae gymnasii*. Ferrara, 1735, vol. II, p. 66 et passim.

L. Choulant. *History and bibliography of anatomic illustration*. Chicago, 1920, p. 150.

A. Corradi. *Tre lettere di illustri anatomici del cinquecento*. Annali universali di Medicina, 1883, vol. 265, p. 174.

V. Ducceschi. *Giambattista Cananò. Gli Scienziati Italiani*. Roma, 1923, vol. I, part. II, pp. 285-292.

N. F. J. Eloy. *Dict. hist. de la Med*. Mons, 1778, vol. I, p. 526.

K. Falkenstein. *Beschr. der Königl. öffentl.* Bibl. zu Dresden. Dresden, 1839, p. 733.

I. Guarini. *Ad Ferrariensis Gymnasii Historiam....supplementum*. Bononiae, 1740-1741.

A. Haller. *Biblioteca anatomica*. Tiguri, 1774, vol. I, p. 192.

Marini. *Archiatri pontifici*. Roma, vol. I, p. 339, 423.

I. B. Morgagni. *Valsava Opera*. Epistolarum anatomicarum duodeviginti. Venetiis, 1740, vol. II, Epis. XV, p. 14.

M. Roth. *Andreas Vesalius Bruxellensis*. Berlin, 1892, pp. 127, 234 et passim.

A. Serafini. *Girolamo da Carpi*. Roma, 1915.

N. Zaffarini. *Scoperte anatomiche di G. B. Canano*. Ferrara, Bresciani, 1809.

FACSIMILE

OF

IOANNES BAPTISTA CANANO

1515 - 1578

GIROLAMO DA CARPI

1501 - 1556

MUSCULORUM HUMANI CORPORIS PICTURATA DISSECTIO

(FERRARA 1541 ?)

4

[This and the following pages 49 to 90 are counted, but not marked, for aesthetic reasons. The reader is advised, for ready reference, to mark the 20 facsimile leaves 1 to 20, distinguishing the recto and verso (a and b) of each leaf, as was the custom of the times].

MVSCVLORVM HVMANI CORPORIS PICTVRATA DISSECTIO PER IOANNEM BAPTISTAM CANANVM FERRARIENSEM MEDICVM, IN BARTHOLOMEI NIGRISOLI FERRARIENSIS PATRITII GRATIAM, NVNC PRIMVM IN LVCEM EDITA.

Jacobi boni Jo. Bapta Canani munere.

BARTHOLOMEO NIGRISOLO FERRARIEN. PATRITIO IOANNES BAPTISTA CANANVS FERRARIENSIS MEDICVS. S. D.

GAlenus Pergamenus Medicorum omniũ post Hippocratem facile princeps, inter alia singulari, ac rara eruditione referta commentaria. quę in amicorum gratiam & medentium vsum composuit, ἀνατομικὰς quoq; ἐγχειρήσεις idest dissectorias administrationes, primum quidem duobus voluminibus compræhensas, Vt Flauio Boetho Romanorũ consuli viro anatomicæ speculationis maxime cupido morẽgereret, conscripsit, Secũdo autẽ, post Boethi obitum, alias (quæ aliqua ex parte extant) longe illis vberiores, amicorum precibus compulsus, exarauit. In quibus modum, ac ordinem dissecandarum Simiæ partium, vtpotè animalis homini quàm simillimi, plenissime docuit. Cum itaq; & tu Bartholomee Nigrisole, Nobilissime pariterq; & doctissime, non minus anatomicæ speculationis desiderio nunc ardeas, quàm Flauius ille Boethus vir consularis olim arserit, Et nobis humana corpora dissecãtibus sæpe affueris quantæq; necessitatis ac vtilitatis in re medica (præsertim quæ manu medentur) sit anatomes peritia, non solum ex Galeni testimonio, verũ & oculis ipsis perspexeris,

videasq́, nostræ tempestatis chirurgos, maiori ex parte, dis-sectionum imperitos, ac propterea exitio hominibus plerumq́; potius, quam saluti esse conspicias, sępissime nos hortari nō destitisti, vt humani corporis partes, nostra opera, picturis expressas in lucem ederemus. Sic enim fieri posse arbitrabaris, vt qui rem medicam profitentur & ex dissectionū oculata inspectione corporum partes agnoscere nō possunt, si ex pictura saltèm aliquam illarū cognitionem haberent, tùtius humanæ saluti consulere valerent. Cui tàm crebræ támq́; saluberimæ exhortationi tuę diùtius repugnare, ac obsistere non potuimus, tanta enìm est humanitas tua, tantaq́; tuorū ergà me meritorū magnitudo, vt me quippiā tibi negare piaculum putem. Varię igitùr cùm sint hominum partes, nullę tamen sunt, quæ màgis rerum extrinsecarum appulsu ledantūr iis, quæ musculi dicūtur, Musculi enìm vulnerantia, pungentia, tūdentia vè, primi excipiunt, eam ob rem hos ipsos eleganti pictura, per Hieronymum Carpensem, pictorem nostro æuo non minus diligentem, quàm insignem, delineatos, in tui gratiam, & hominum salutem, edere decreuimus. Prodeunt itaq́; tuis auspitiis, & in lucem exeunt, vir ornatissime, humanorum artuum musculi, quos, quanta valuimus diligētia, Antonio Mario Canano Ferrariensi Medico, mihi arctissima consanguinitate coniuncto monstrante; dissecuimus, & Typis excudi curauimus, eosq́; nunc tui nominis immortalitati dicamus, opus autèm hoc nostrum lecturos oratos velim, nè ipsum prius damnēt, quàm cùm re ip-

ſi, ſæpè inſpiciendo, id contulerint. Sic enim arbitror ipſos, conatus noſtros boni pòtius conſulturos, quàm in eos genuinum inique fracturos.

Vale.

CANDIDO LECTORI.

QVum corpora & viua, & mortua secari possint, vtrunq; secandi modũ ex antiquioribus aliqui (celso referente) vituperarunt, Primum, veluti crudelem & medico, humanę salutis praesidi, non conuenientem, viuorum quippe hominum aluum, atq; precordia incidere, latrocinantis potius medici esse putabant, quàm qualia sint hominis interiora discere cupientis, cum praesertim ex his, quę tanta violentia querantur, alia non possint omnino cognosci, alia possint etiam sine scelere, Nam color, mollities, durities, leuitas, asperitas, talia non sunt inciso corpore, qualia integro fuere, quoniam si corpora inuiolata, metu, dolore, inedia, cruditate, lassitudine, milleq; aliis affectibus quibus obnoxia sunt mutantur, multo magis interiora, quibus maior mollities, & lux ipsa noua existit, sub grauissimis vulneribus & ipsa trucidatione mutantur, stultumq; videtur, quale quidque viuo homini est, tale morienti, imo iam mortuo, esse existimare, si quid tamen sit, quod spirante adhuc homine, aspectui subiiciatur, id casus saepe curantibus offert contingit enim interdùm hominem sic vulnerari, vt interior aliqua pars nudetur, & in alio alia, vnde sedem, ordinem, figurã, magnitudinem, similiaq; alia prudens medicus per misericordiam sanitatem moliendo, quae alii per cędem dira crudelitate, cognoscit. Ob hoc ne alterum quidem sectionis modũ, mortuorum scilicet lacerationem, necessarium esse dicebant,

qui & si non crudelis, fœdus tamen existit, cum aliter plæ raque in mortuis se habeant, & quæ in viuis cognosci pos sunt, ipsa curatio abunde demonstret. Cæterum hæc ipsa, corporum anatomen non verè oppuguantia illius vtilitatem ac necessitatē agnoscentes facile confutabunt, duplex enim cum sit corporum dissectio, viuorum scilicèt, & mortuorum ex prima (si recte administretur) internarum aliquot partiū (& si non omnium) actionem ad earum curationes cognitu necessariam, agnoscemus, non quidem viuos homines secā do (quod crudelis, & carnificis potius hominis, quám medi ci esse videtur) sed bruta magis animantia, quæ quàm plu rimis ex partibus, atq; earum functionibus homini quám si millima sunt, vt in renibus, vreteris, vesica, vtero, intesti nis, lactibus, omēto, liene, ventriculo, hepate, transuerso septo, gulla, pulmonibus, corde, & similibus aliis, ex altera verò mortuorum dissectione, partium figuram, numerum, situm, colligationem, & actionem quandoq; (vt musculis ad origi nē tractis) res ad medēdi peritiam maximé necessarias disce re licet, Nec hoc fœdum est, īmo pulchrum, valdeq; conue niens, si laborantium partium curationem, & agnitionē, ad quam casus sufficere nullatenus potest, nobis ipsis prę ocu lis posuerimus, rara enim vulnera sunt, per quę interiora ita aperiantur vt eorum figuram, positum, societatemq;, adamus sim cognoscere valeas, & si casu aliquibus partibus id eue niat, non omnibus tamèn unq̄ euenerit, Verum in mortuo rum dissectione omnes hominis partes breui tempore cognos

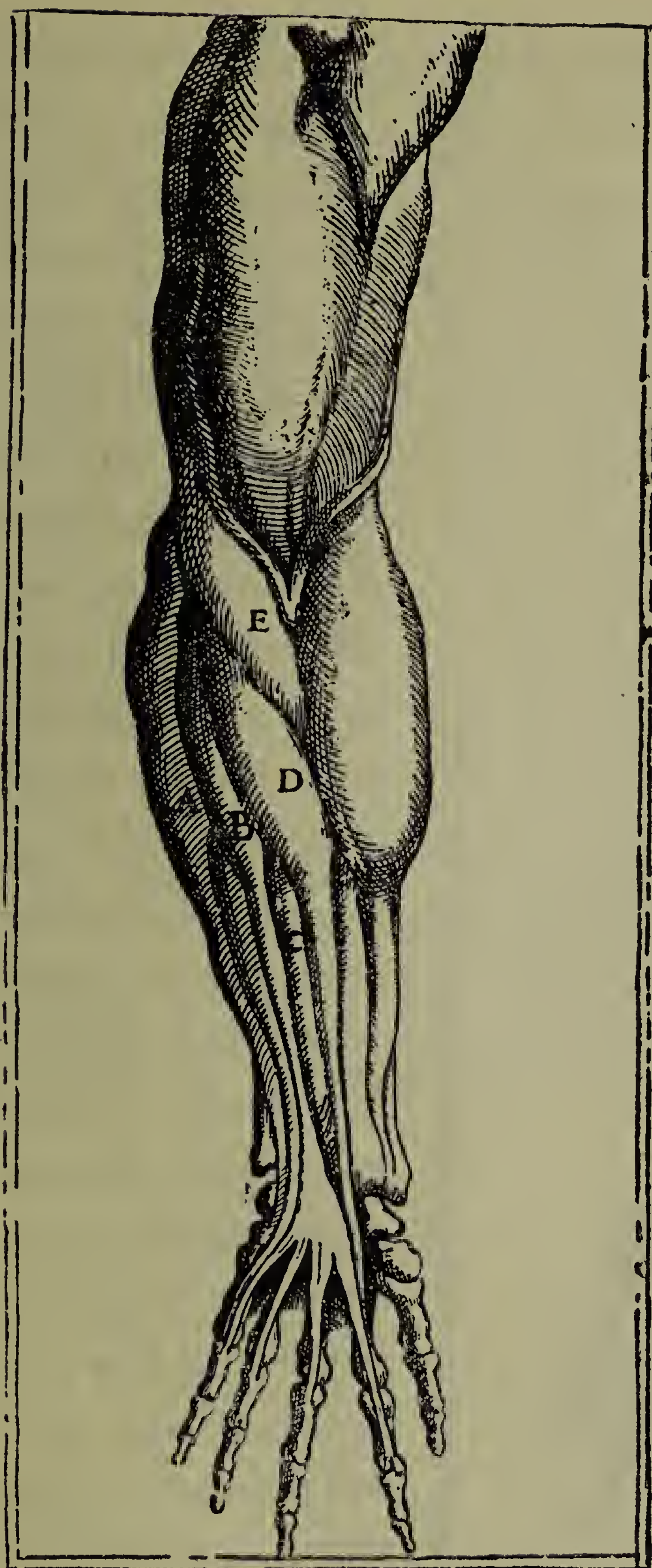
cimus, quas per casum homini, quántum vis laborioso, & prudenti, etiàm si nestoreos annos viueret, cognoscere nõ daretur. Cum igitur, & in viuorum animantiũ, defunctorũq; hominum dissectione, quantum nobis per adolescentiam nostram licuit, diligènter admòdum versati fuerimus, multaq; ab antiquis iam prídem litterarum monumentis tradita oculis ipsis perspexerimus, nònulla etiam nostra opera adinuenerimus, à cõmuni medentium vsu non aliena, dignum duximus horũ aliqua medicinæ sectatoribus impartiri, Hincq; effectum est, vt Primum hunc musculorum dissectionis librũ crebris Bartholomei Nigrisoli Ferrarien. Patritii efflagitationibus impulsi ediderimus, Reliquos sub calchographi prælo iàm positos mox edituri. Hunc itaq; benigno animo accipias velim candide lector, tua ènim benignitas perinde ac calcar quoddam erit, quod me ad maiora assidue impellat, Tu intèrim vale, deosq; nobis, tantis in laboribus propitios precare, Instituti vero nostri ita nascatur exordium.

IONNIS BAPTISTAE CANA-NI FERRARIENSIS ME-DICI HVMANORVM MVSCVLORVM PICTVRATAE DISSECTI-ONIS.

LIBER PRIMVS.

IN hoc primo libro Galenum ſequentes Manus muſculos ponemus, nomine autem manus (Hippocratis & Galeni more) vulgo dictum brachiũ intelligimus, quod in tres primarias partes diuiditur, extremam ſcilicet manũ (quæ abſoluto nomine, manus dici ſolet) cubitum, & βραχίονα a Græcis appellatum, extrema manus tres habet partes, digitos videlicet, brachiale quod Grȩce καρπὸς nominatur, & inter hec medium, Græci μετακάρπιον nuncupãt, nos poſtbrachiale dicimus. Brachiũ ſiue malis Græce dicere βραχίων vnico oſſe conſtat, quod Celſus humerũ appellauit, Cubitus vero (quem brachium nominat) duobus, quorum vnus Græce κερκὶς latine radius dicitur, alter autẽ a Grȩcis quidem πῆχυς a Celſo vero cubitus nominatur, At in extrema manu ſeptem & viginti oſſa exiſtunt, octo ſcilicet brachialis, quatuor poſtbrachialis, & quindecim di-

gitorum, quę omnia nouisse oportet ad exactam musculorũ in hoc primo libro depictorum cognitionem, hec pauca prę-fati ad propositum accedamus.



Hac in pictura hi nudantur musculi videlicet.

A. MVSCVLVS *Flectens brachiale ad minimum digitum.*

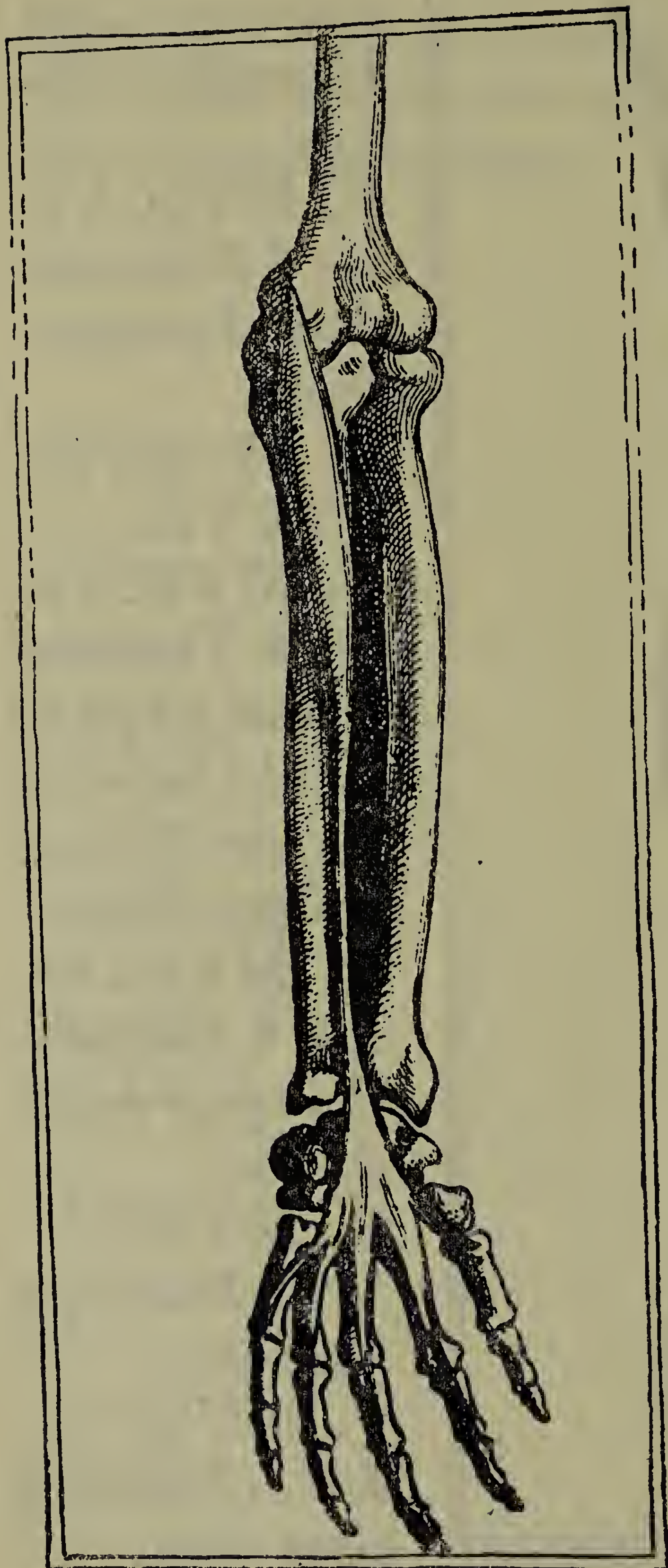
B. MVSCVLVS *Volæ.*

C. MVSCVLVS *Tendonum scissorum, sub quo est musculus habens tendines non fissos ambo digitos flectunt.*

D. MVSCVLVS *Flectens brachiale propè magnũ digitum.*

E. MVSCVLVS *Manum pronam faciens.*

F. MVSCVLVS. *Manum supinam redens.*



MVSCVLVS Volæ manus qui secundum antiquos (vt ait Galenus secundo de vsu partiũ & primo de Anatomicis aggressionibus) flectit & ipse quinq; digitos secundum ipsum autem factus est, ad firmandam cutim manus internam, melioris apprehensionis gratia, ad prohibendũq; ortum pilorum, causa exquisitioris sensus. Ratio vero Galeni primo de Anatomicis aggressionibus contra antiquos est. Oportet inquit secundum antiquos tendinem musculi mouentis aliquẽ articulum inseri ossi illius. Ast tendo mus

culi volæ non inſeritur oſſibus digitorum, igitur non poteſt ſecundum eorum placita digitos mouere. Ratio autem hęc licet contra antiquos ſit valida, ſimpliciter tamē videtur inualida, Poſſet enim quiſpiam dicere, non eſſe neceſſarium ſemper tendinem muſculi mouentis articulum inſeri, ſiue cō iūgi oſſi articuli, sed ſat fore ſi iungatur alicui coiuncto oſſi, pro vt tendo huius muſculi coniungitur ligamento, quod iūctum eſt oſſibus digitorum. Oritur hic muſculus ab interno brachii nodo, mediusq; procedens inter muſculos carpū flectētes, ſuo tendine ſupereminet ligamento interno, quod iungit cubitum radio, poſtea dilatatur illius tendo in trianguli figura, cuius acumen eſt prope ligamentum dictum, baſis autem in principio poſtbrachialis, quæ per quinq; veluti tendines inſeritur ligamento, compręhēdenti aliorū digitos flectentium muſculorum tendines, Biſariam hunc tendinem licet ſecare cum cute videlicet, & ſine cute.



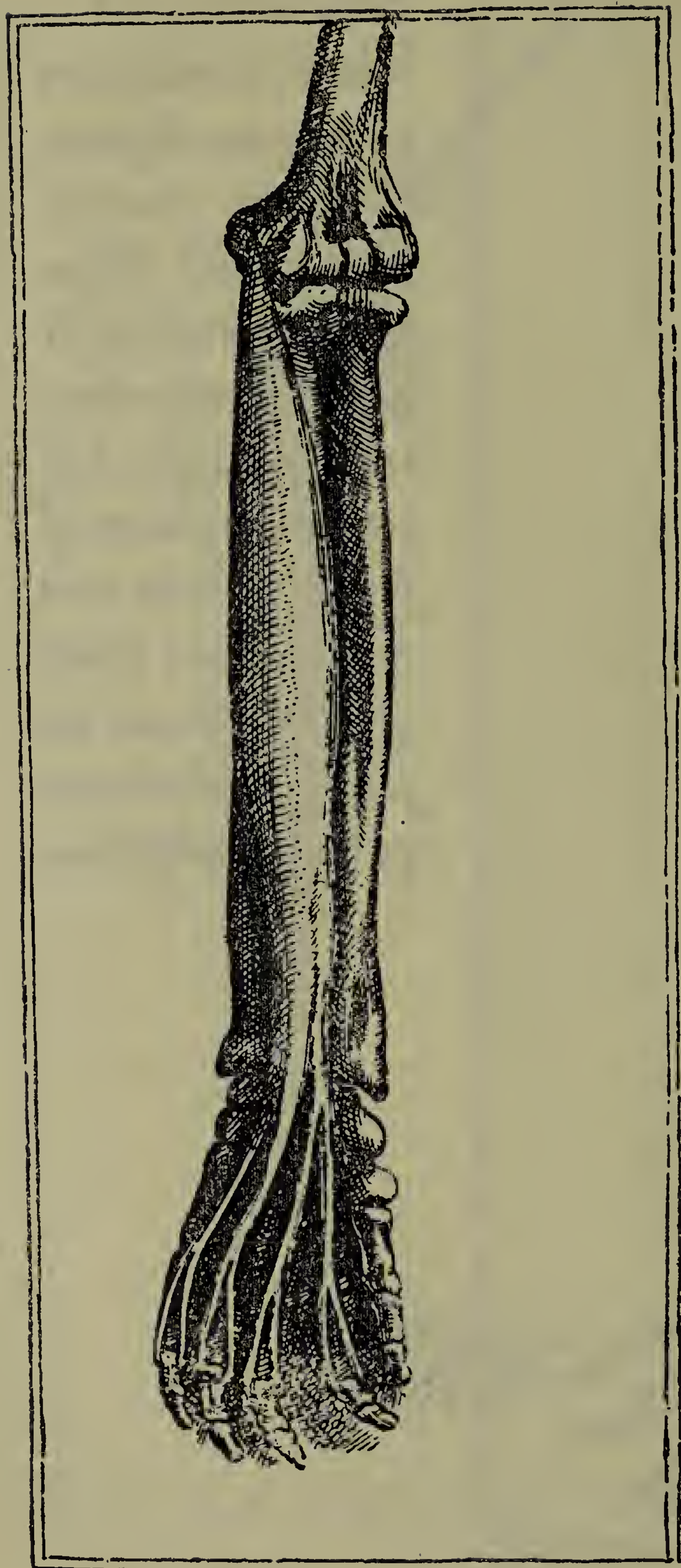
MVSCVLVS

Flectẽs brachiale, qui oritur ab interiore nodo brachii, cubito adherens, inserit' ossi recto, mẽbraneoq́, quod è regione minimi digiti, & secũdum cubiti processũ existit, quẽ Greci anatomici modo γραφιοειδῆ modo στυλοειδῆ nominabant.



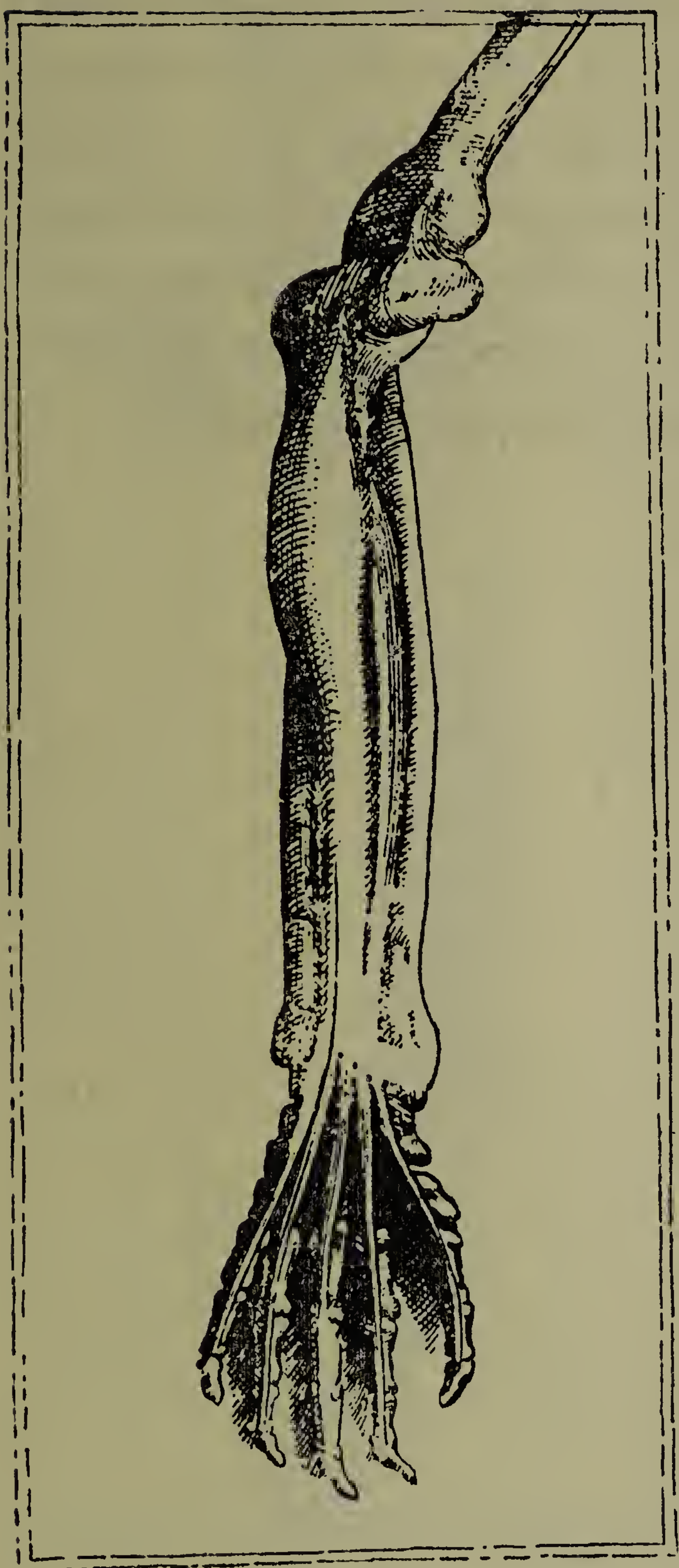
MVS[c]VLVS

*Flectẽs brachiale pro
pè magnum digitum,
Oritur ab interiore
nodo brachii obliqua
usq; aliquàntisper su
pra cubitum tendens,
radio protensus, inse
ritur per tendinem os
si postbrachialis ante
indicem, licèt primo
aspectu videatur in=
seri ossi brachialis pro
pé magnum digitum.*



MVSCVLVS

Desinens in tendines fissos flectens secundum articulum digitorum, preter articulum magni digiti qui non accipit tendinem ab hoc musculo, oritur ab interiore nodo brachii aliquàliter cubitum attingendo, inseriturq; tẽdinibus secundo internodio quatuor digitorum, contineturq; sub ligamento radium, & cubitũ interna in parte constringente.



MVSCVLVS
flectens, ſecundũ Galenum, primũ & tertium articulum quatuor digitorũ, magni autẽ digiti tantũ ſecundum & tertium internodiũ flectit, Oritur à partibus cubiti iuxta gibberum, & per profundiora mediam radii cubitiq; regionẽ vniuerſam cõplexus vtriq; oſſi cohæret, ac in tres veluti partes delineatus eſt, quarũ vna minimum digitũ reſpicit, altera indicẽ, tertia medios digitos, Cõtinẽtur huius muſculi tendines ſub ligamento ſtringente radium, & cubitũ intrinſecus, per mediasq; ſciſſiones tẽdinũ flecõ

tentium ſecundum internodium quatuor digitorum ad eorum extremitatem feruntur, & vna cum tendinibus præcedentis, ſub eodem ligamento á principio digitorum, vſq; ad finem protenſi ſunt, per quod ligamentum vult Galenus hunc muſculum flectere primum internodium digitorum quatuor, verum non maior videtur ratio de illo, quam de hoc ipſo, cum ipſius tendines ſub eodem ligamento comprahenſi ſint.



MVSCVLI, *pronam facientes manũ, quorum alter oritur ex elatioribus partibus nodi interioris brachii, obliquusq; supra cubitum latus inseritur radio intrinsecus ad medias ipsius vsq; partes extensus. Reliquus vero ex inferiore parte cubiti iuxtà brachiale exortus obliquus inseritur ossi radii, habent terminum carnosum & támen ossa mouent, licèt Galenus* Primo *de motu musculorum scribat,* Musculos *mouentes ossa in tendines omnino maiores vel minores terminare.* De *propositis aũt in secũdo de vsu partiũ oppositum asserit.*



In hac pictura hi apparẽt muſculi videlicet.

A. Muſculus ex interioribus vnus, qnq; tẽdines nõ fiſſos ꝑducẽs

B. Muſculus ſupinã manum reddẽns.

C. Muſculus brachiale ad minimum digitum reflectens.

D. Muſculus minimũ digitũ extendens, ac in latus ducens.

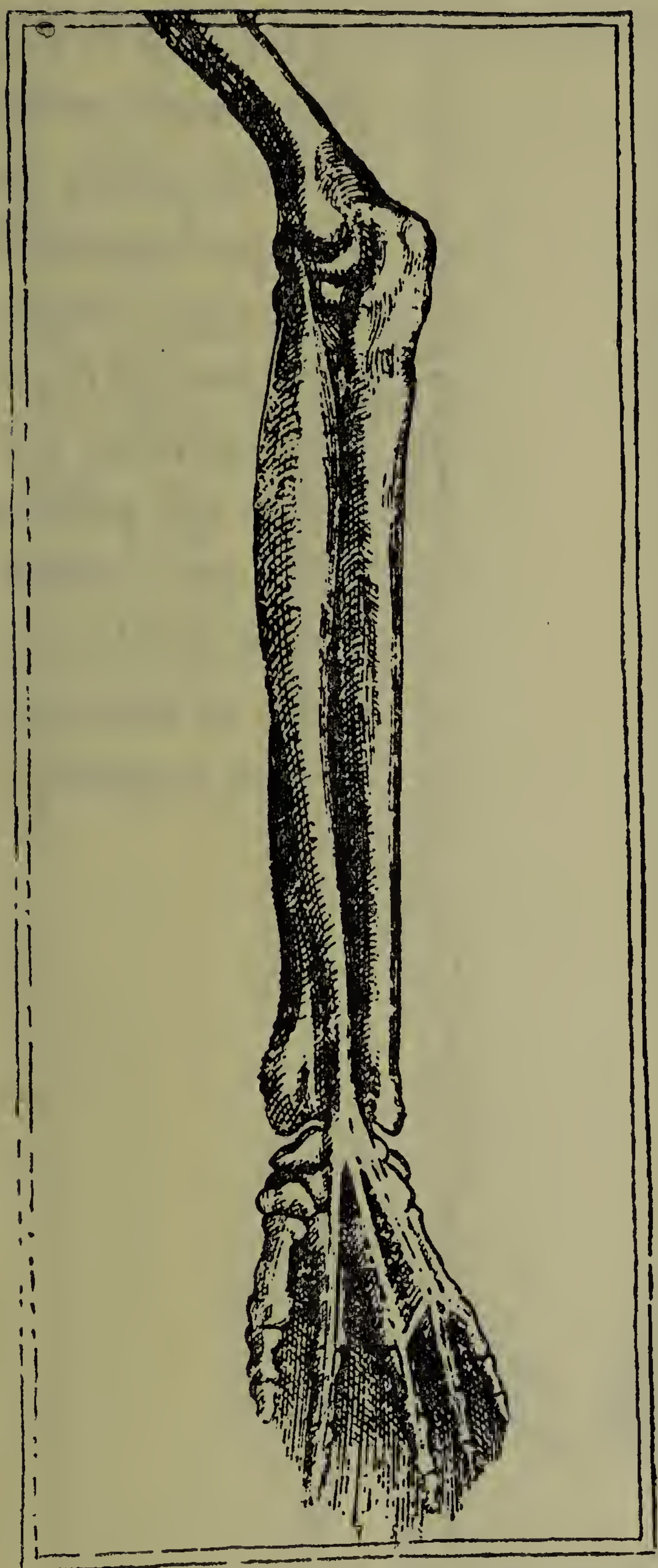
E. Muſculus digitos tres extendens.

F. Muſculus indicẽ in latus ducens.

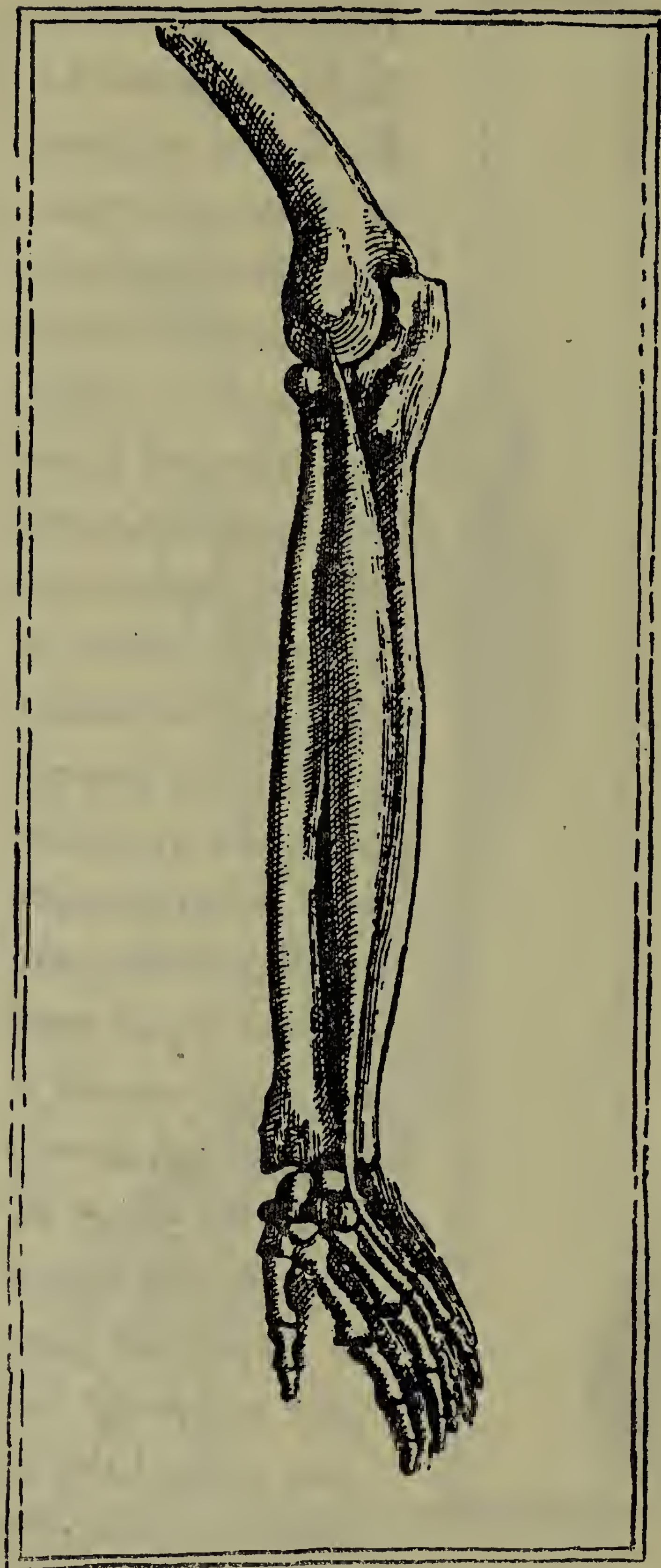
G. Muſculus bifidus magnũ digitũ ab aliis abducendo extẽdens.

H. Muſculus duplici tendine carpũ euertens

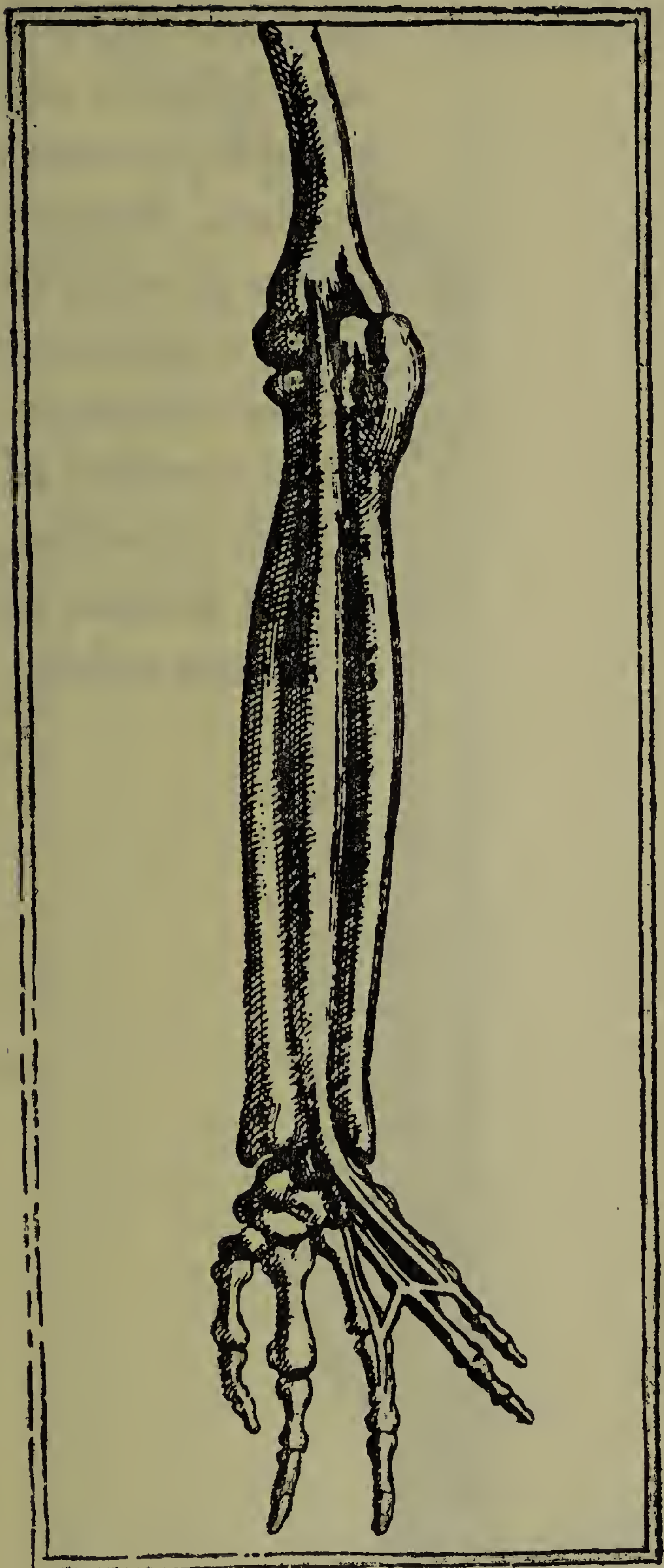
I. Muſculus ſupinam manum faciens.



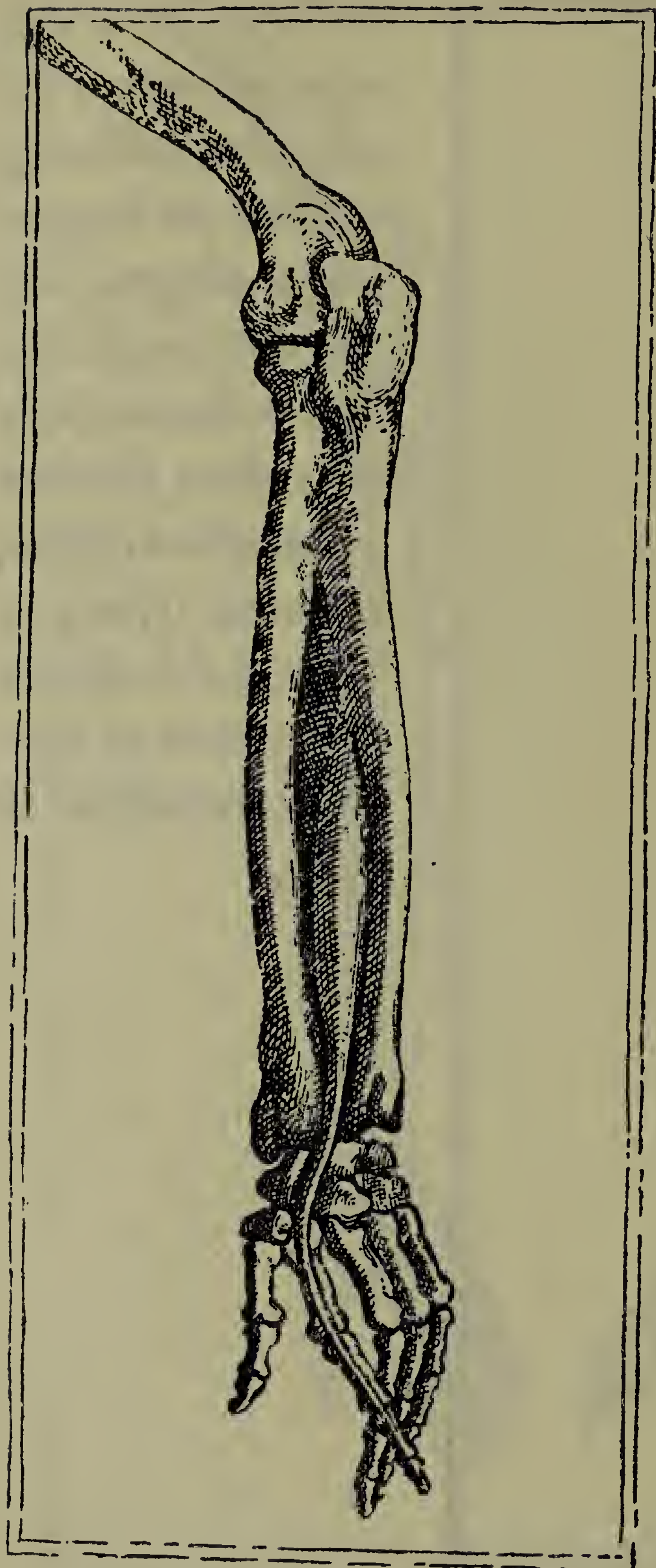
Musculus q secudum Galenum quatuor habet tēdines ad quatuor digitos prꝺter magnũ tēdētes, re autem ipsa tantũ tres habere videtur ad tres digitos īter magnũ & minimũ porrectos, ex quibus duo duplices apparēt, tēdo scilicet indicis, & tēdo ãnularis q duas habet propagines, quarũ vna cóiungitur tēdini ad medium digitũ tēdēti, altera vero ei q ad minimũ digitũ procedit, et á ꝓprio musculo originē ducit Cótinet hic musculus sub ligamēto extrinsecus stringēte radium & cubitum, ortũq; habet ab exteriore nodo brachii et supra radiũ ꝓtēdit



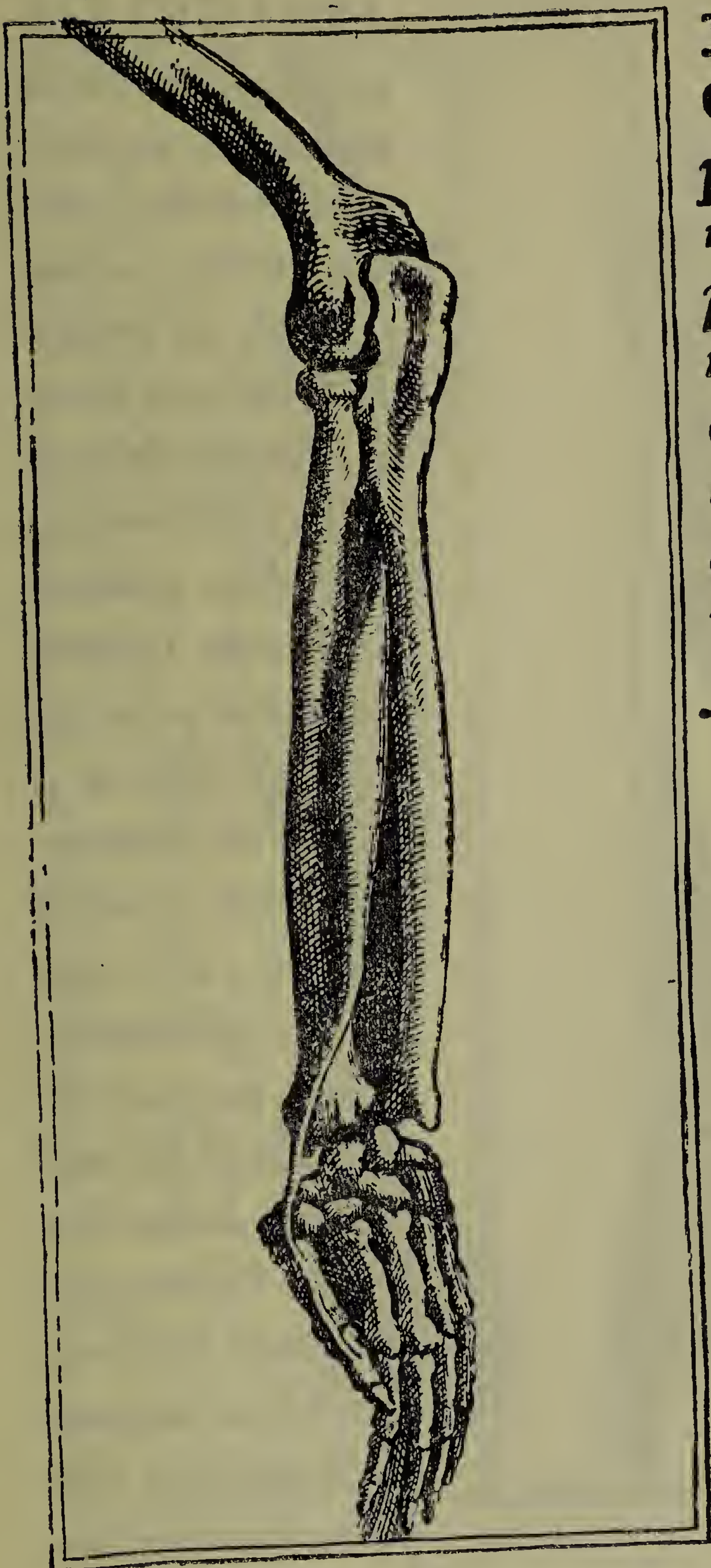
MVSCVLVS, *oriens á nodo exteriore brachii cubito, radioq́; per longitudinẽ hærens, & sub proprio ligamento in fine cubiti astrictus, suo tendine ossi postbrachialis ante minimũ digitum insertus, brachiale ad minimum digitum extendit.*



MVSCVLVS *ex nodo exteriore brachii oriens, radium & cubitum per longitudinem attingens, in fine cubiti proprio ligamento cõtentus in duos tendines ſcinditur ad minimum digitum tendentes, ipſumq; in latus, vel in inferiorem partem ab aliis digitis extendẽdo abducit.*

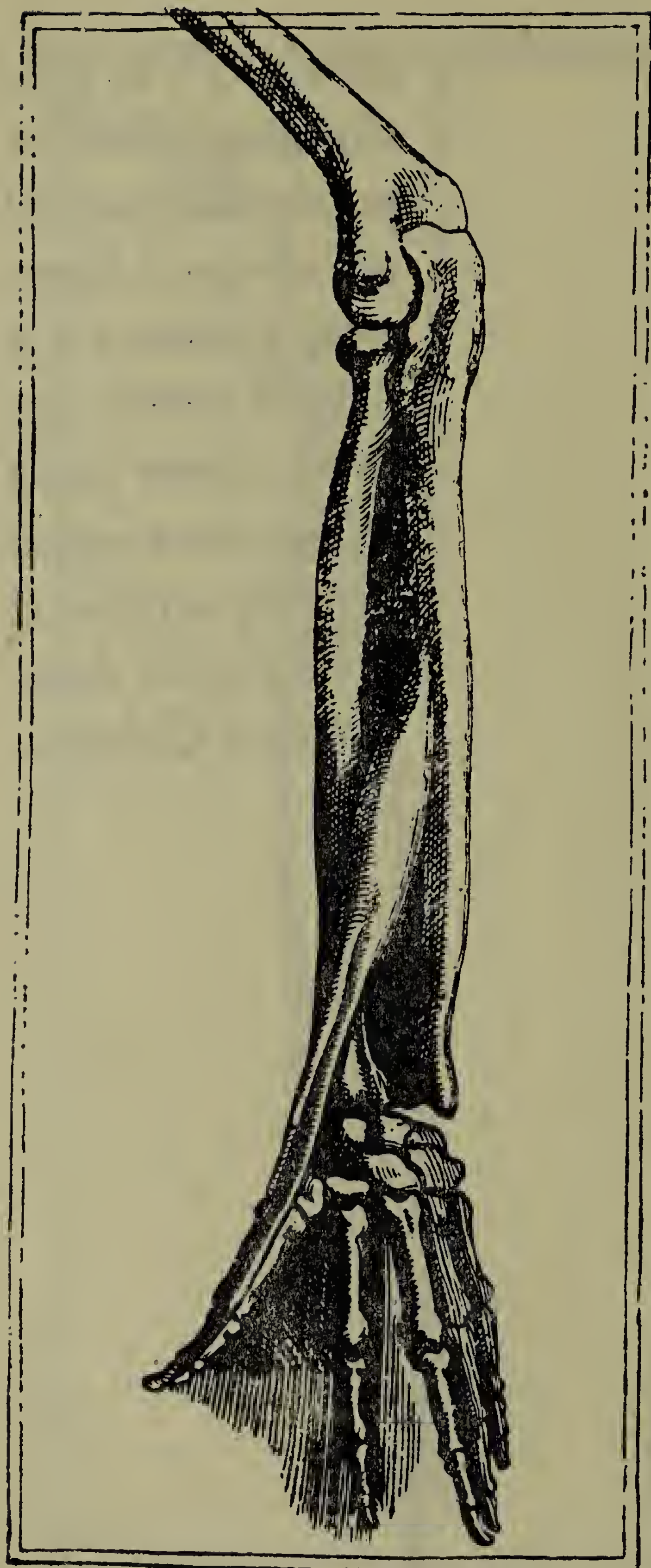


MVSCVLVS oriens ex cubito eiqꝫ adhęrens ſub cõmuni ligamento ſtringente radium & cubitũ cõtentus, vnicum tendinem ad indicem producens, non duos ad indicem & medium, vt vult Galenus, ducit indicem in latus.

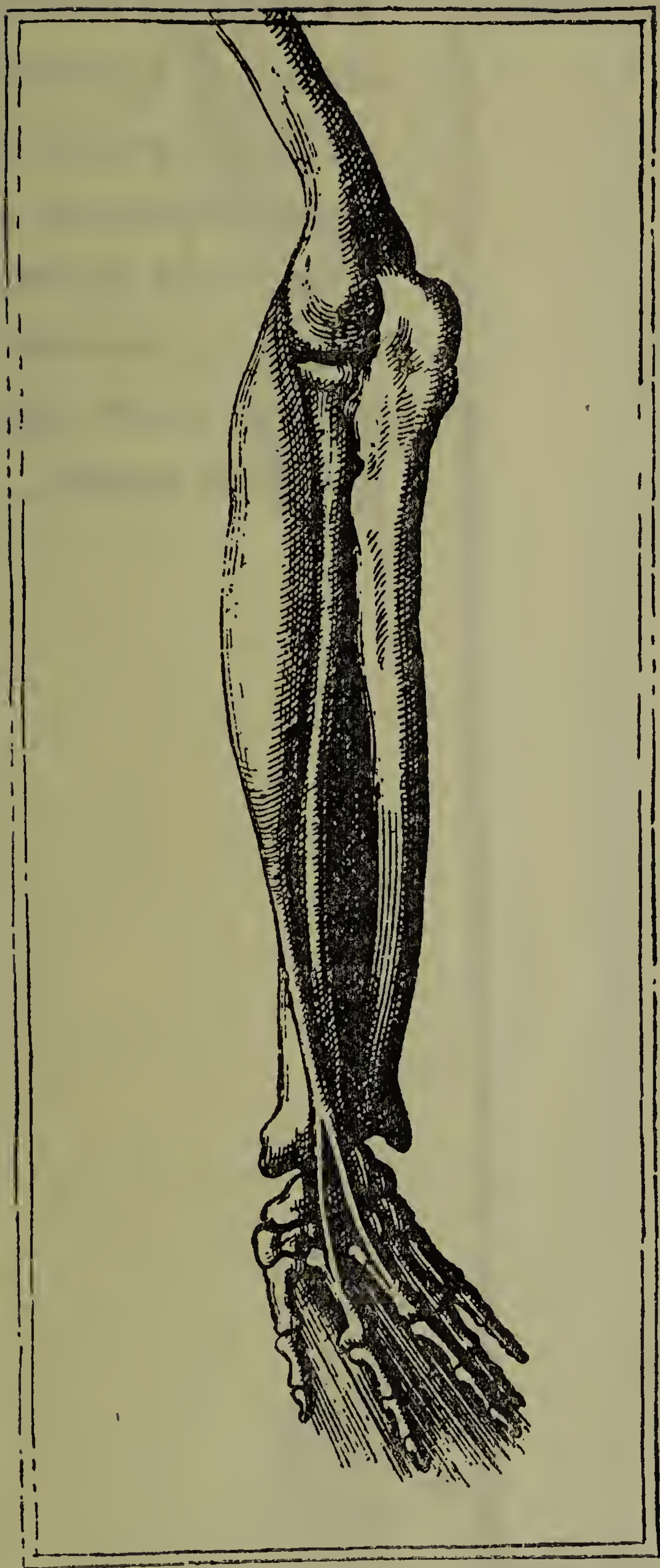


MVSCVLVS,

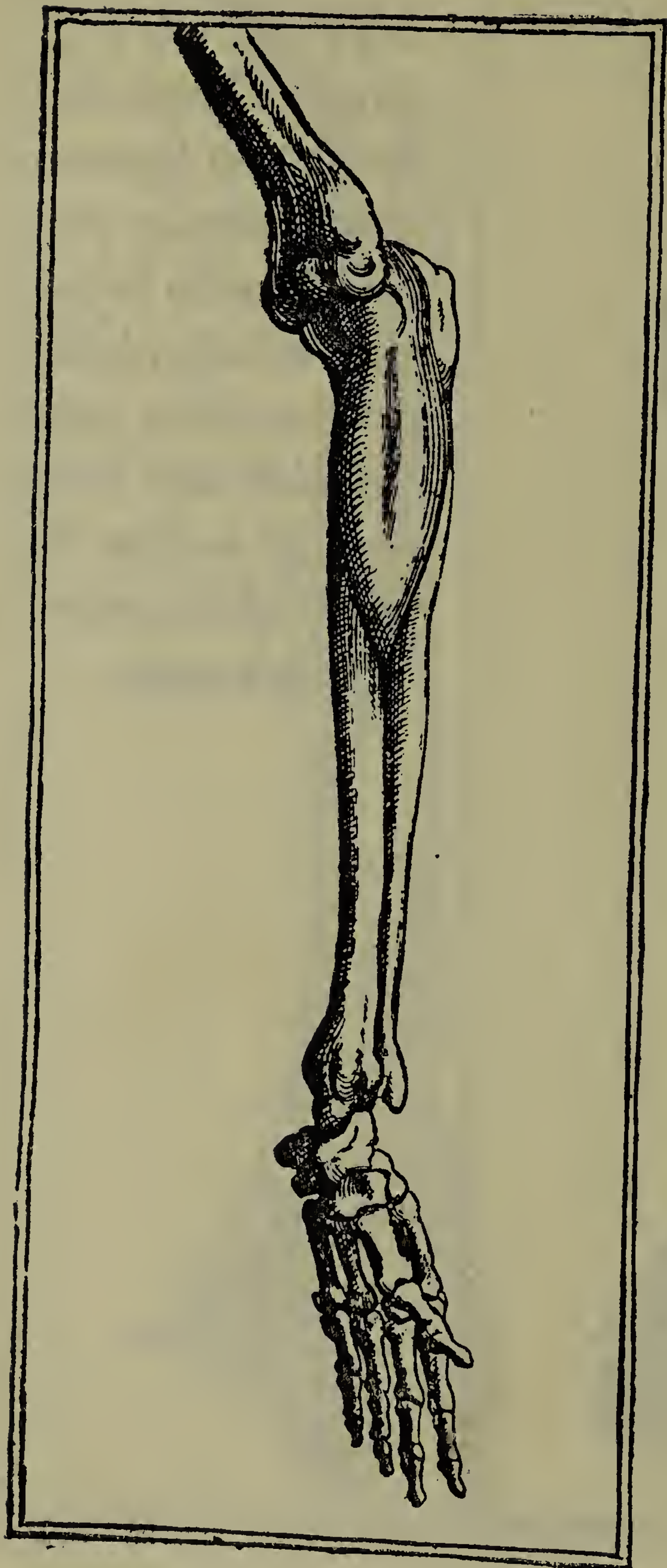
Oriens ex cubito su-pra eius medium, radium attingit, sub pro-prioq; ligamento in fine radii astrictus, vnicum tendinem producit, per totum magnũ digitum protensum, et in latus ipsum ducit secundum Galenum.



MVSCVLVS ex membrana diuidẽte interiores muſculos ab exterioribus, cubitoq́; exortus, radium aſcendit, ſub proprioq́; ligamẽto, in fine radii (vbi inſculptus eſt radius) continetur, duos tendines producit, quorũ vnus inſeritur extremitati primi oſſis magni digiti nõ ꝓcedens ad vltimam eius aciem, vt voluit Galenus, alter vero inſeritur oſſi brachialis antè magnum digitũ. Poteſt hic muſculus pro duobus haberi, ait Galenus, per alterũ enim tendinem brachiale ad magnum digitũ extẽdit, ꝓ reliquũ verò abducit magnum digitum ab aliis ipſum aliqualiter extendendo.



MVSCVLVS, *exoriens à nodo exterior̄ brachii supra radium protensus, proprio ligamēto in fine radii astrictus, bifido tendine ossibus postbrachialis antè indicem, & medium digitos insertus totum brachiale euertit.*



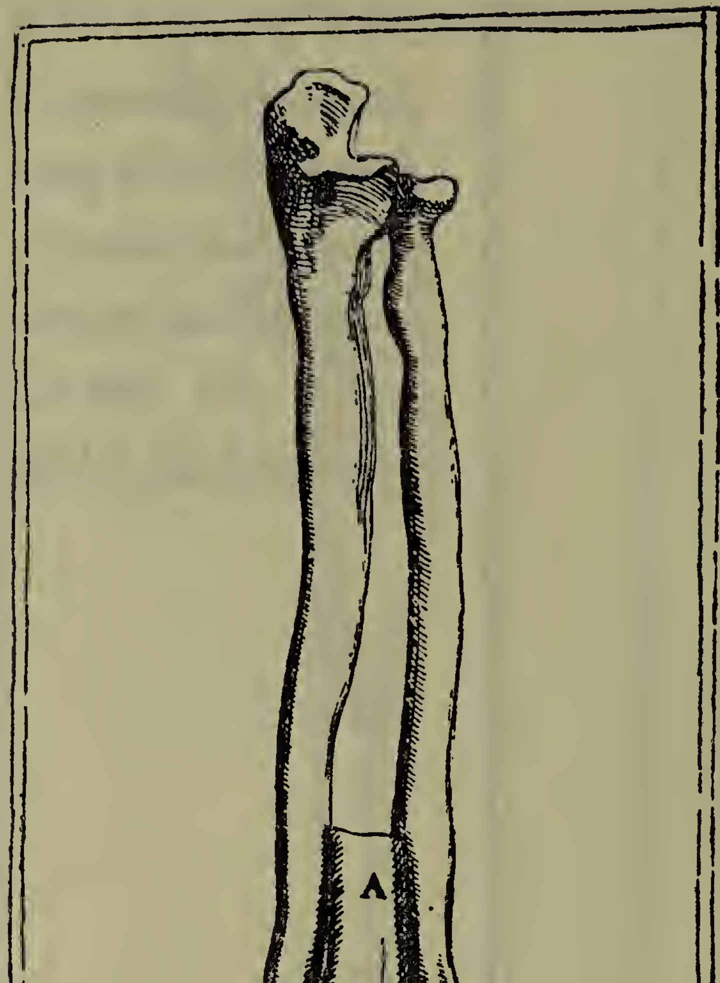
MVSCVLVS

oriens ex ligamento mẽbraneo articuli cubitum aliquatenus attingẽs, radio qua eminet per extremum neruosius insertatur, supinam facit manum.



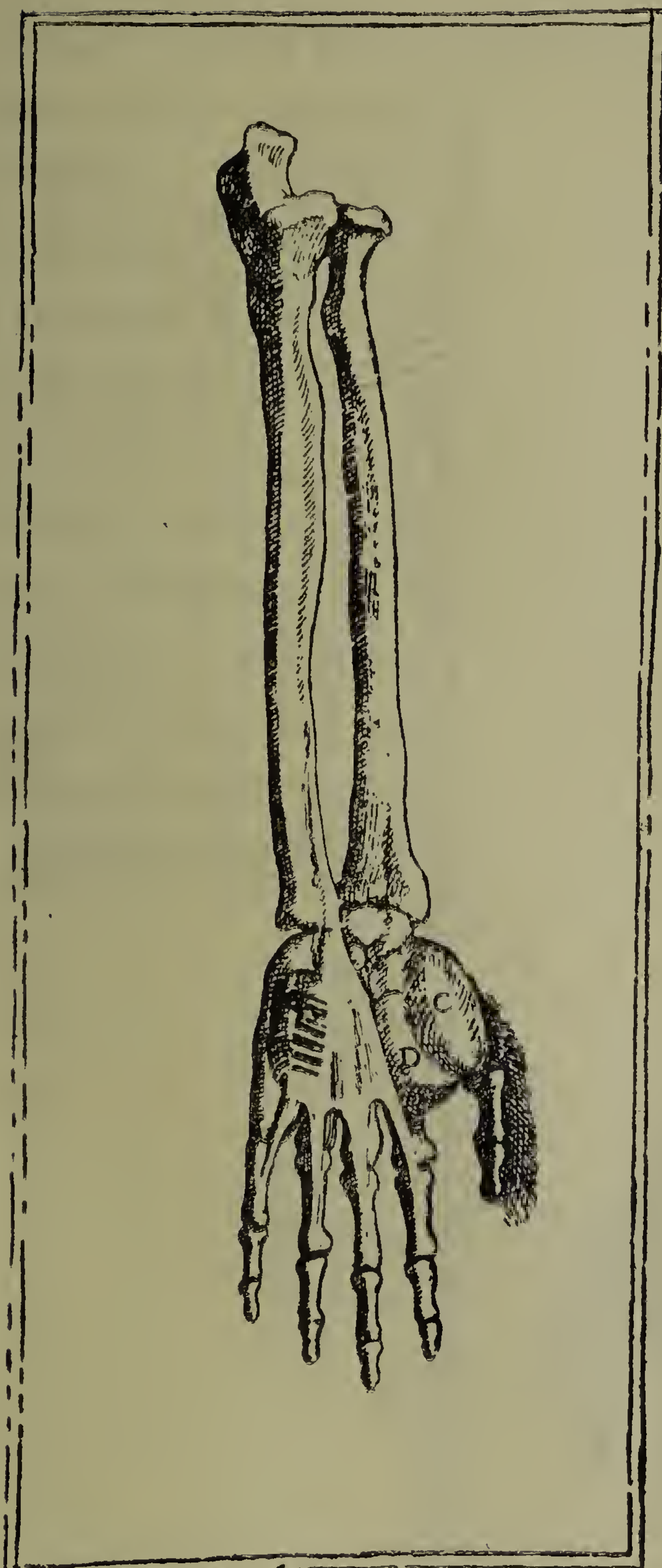
MVSCVLVS

Supinam manum red dens ex brachio prope medium exoriens, supra radium protensus illi suo fine ad usq; brachiale inserit'



A. Muſculi quatuor exiles orientes ex mẽbranis circundantibus tendines non fiſſos, digitorũ latera ſubeunt, in dextra quidẽ (manu exiſtente prona) verſus ſiniſtram in ſiniſtra aũt verſus dextram, habent mouere digitos in latus, q qui dẽ ſunt in dextra verſus ſiniſtram, & qui in ſiniſtra verſus dextram.

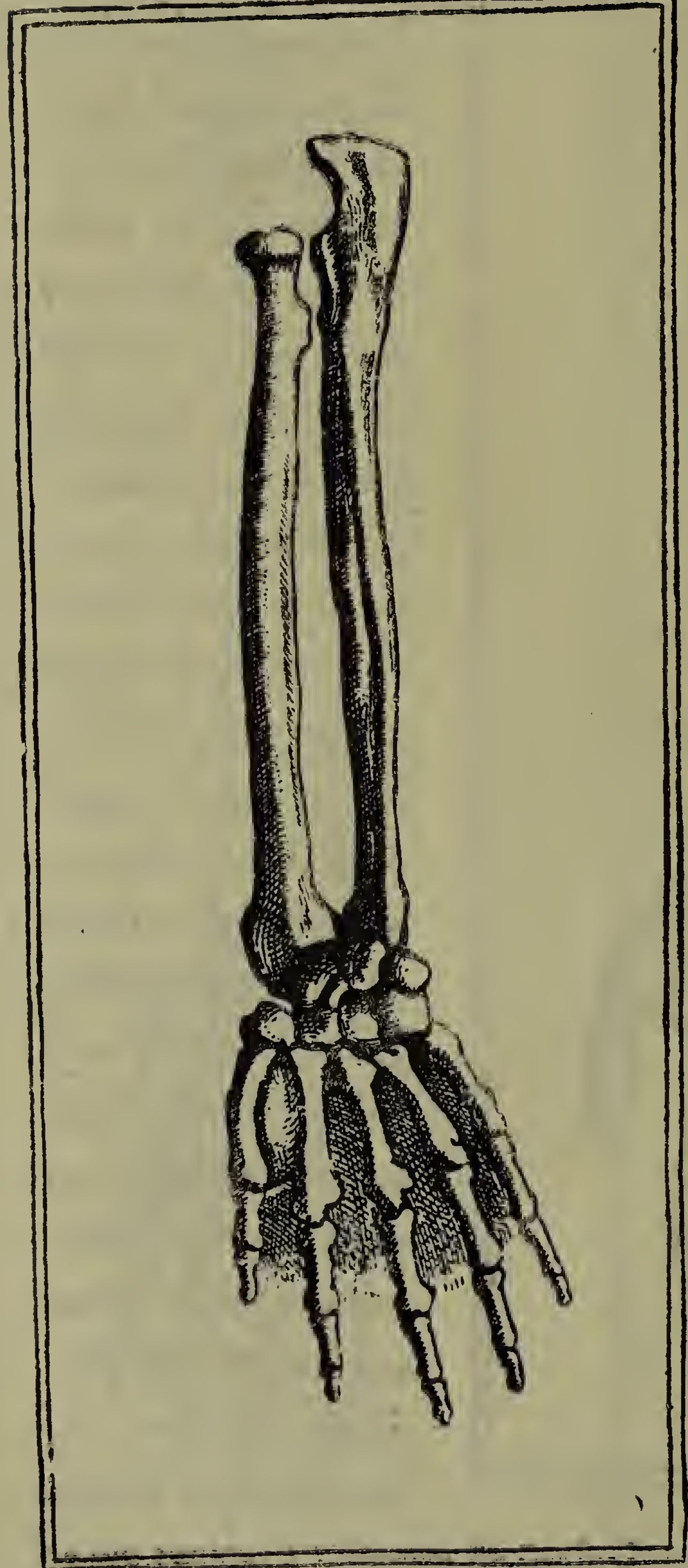
B. Muſculus, oriens ex oſſe cui annectitur tendo muſculi brachiale ad minimum digitum flectentis, inſeritur minimo digito inferiore in parte, & ipſum ab aliis digitis abducit.



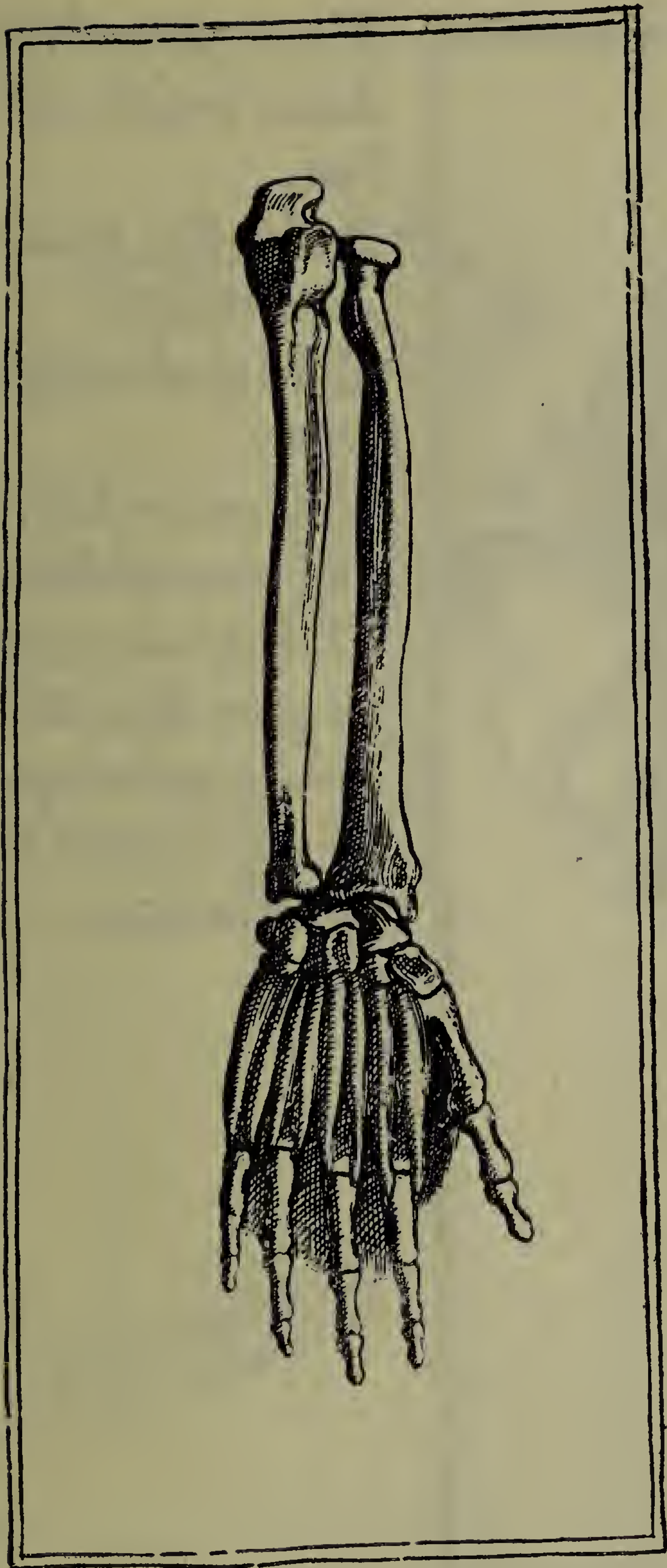
C. Musculus, oriens à primo osse brachialis ꝓpè magnũ digitũ cui inseritur, habet secundũ Galenũ abducere eũ ab aliis. At videtur factus ad trahẽdum potius magnũ digitũ versus minimũ.

D. Musculus suo capite ossi postbrachialis anté mediũ digitũ affixus, obliqs fibris inserit' primo ossi magni digiti, habet adducere magnũ digitũ ad indicẽ interius inclinãdo.

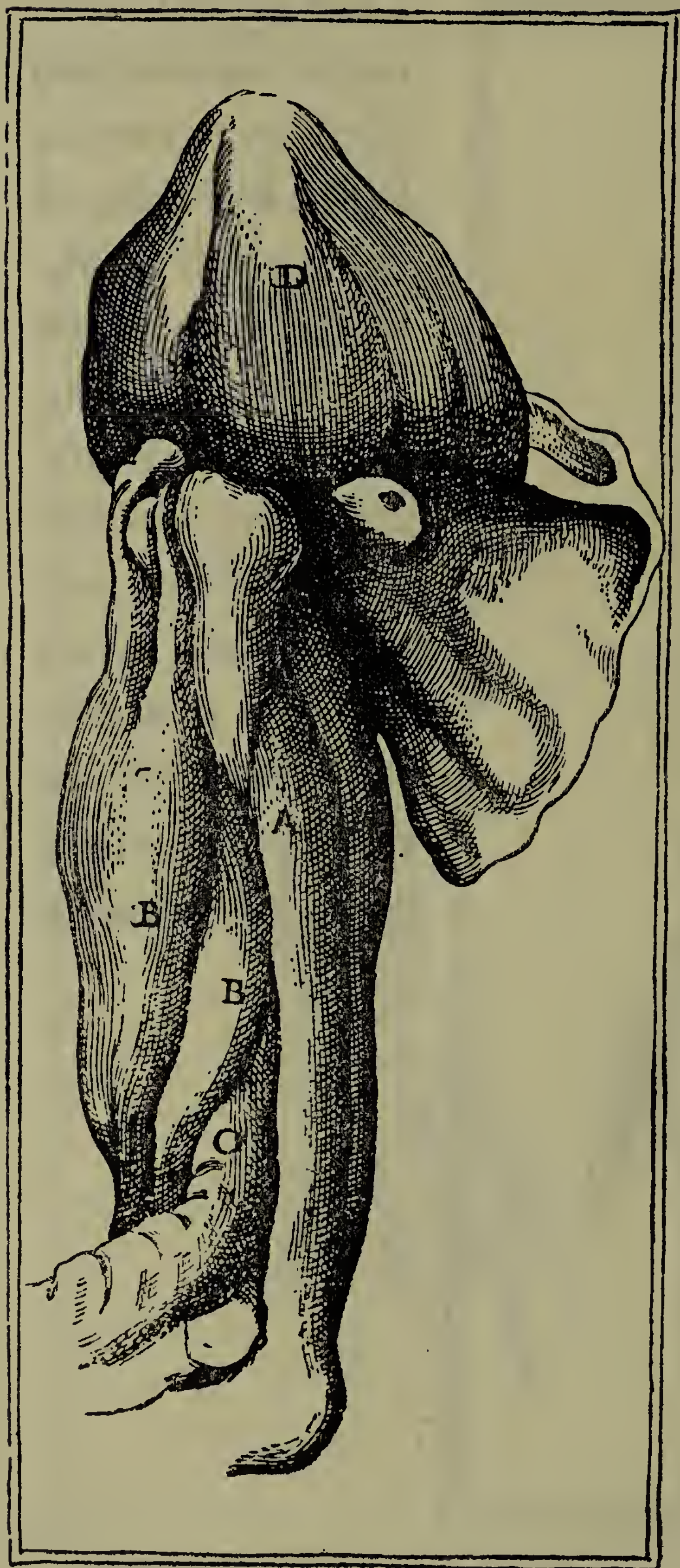
E. musculus, siue musculi q. siti sunt, supra musculũ abducẽtẽ minimũ digitũ ab aliis, in parte interiore manus extremę, obliquis fibris cuti hęrent, & suis tẽdinibus tendini volę iunguntur, horum musculorũ nõ meminit Galenus, qui ad tẽdinis volę dilatationem facti videntur.



MVSCVLVS de quo Galenus non meminit, qui in parte exteriore manus post brachiali anté indicē affixus, obliquis fibris ossi primo magni digiti insertus, eum ad indicem adducit, exterius inclinando, simul autem cum secundo præcedentium rectam adductionem facit,



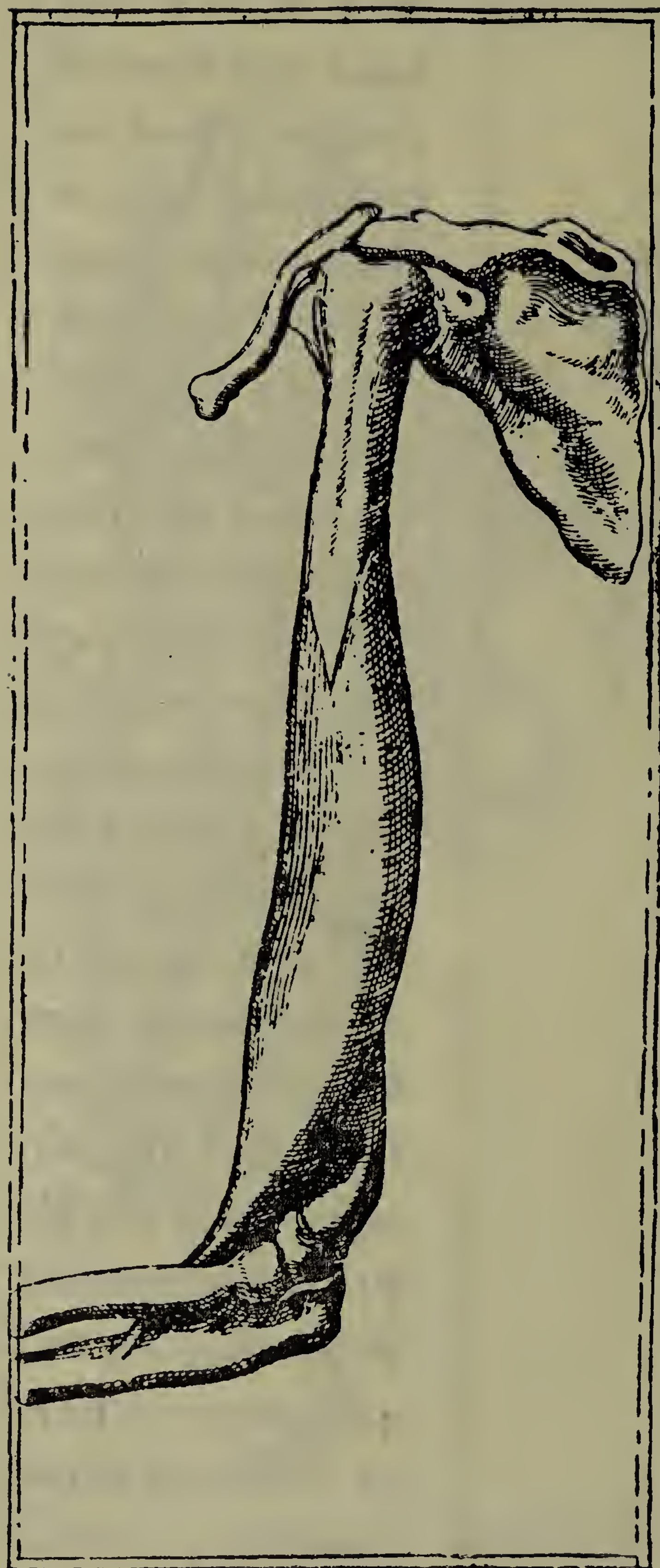
Octo musculi exiles corpus vnū carnosum efficientes, ex coarticulatione brachialis, cū postbrachiali exorti, binatim priori dearticulationi digitorum, ex interioribus partibus inserti, lateraliū partium aliquid accipientes, simul rectam flexionem primi articuli faciunt, seòrsum verò flectunt, in latus parū quid inclinādo.



Hac in pictura hi nu dantur musculi vidè licet.
A. Musculi vlnam extendentes.
B. Musculi vlnã fle ctentes.
C. Caput musculi su pinã manũ reddẽtis.
D. Musculus ceruicis quem aliqui δελτ οειδὴ appellarũt quo niã Δ grecę litteræ fi guram imitatur.



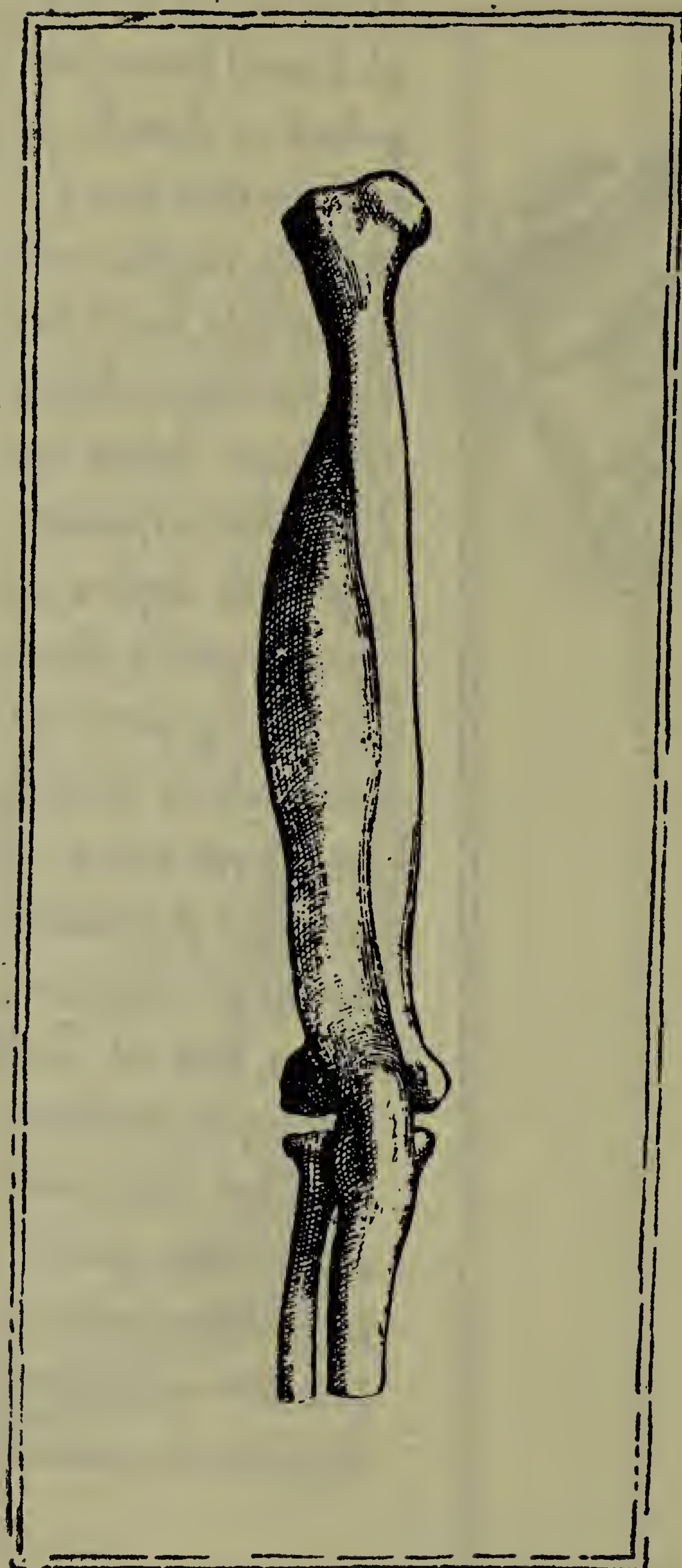
MVSCVLVS
*iuxta venā humeralē
citrà conſectionē com
spicuus, duo habet ca
pita, vnum per patu-
lā brachii rimam ad
ſcapularum ceruicis
eminentiā procedens,
alterum ad proceſſum*
ἀγκυροειδῆ *vel* κορα
κοειδῆ *dictū, hec capi
ta in idem venientia
hunc muſculū genera
rūt, qui neruoſā exili
tatē faciēs, validū tē
dinē procreat, quo ra
dio inſeritur, & mem
branoſi ligaminis ar-
ticuli aliq̄d accipiēs
totū articulū attollit,
paulatìm ad interiora
inclinando, cum muſ
culo autem ei ſubiec
to rectam flexionem
operatur.*



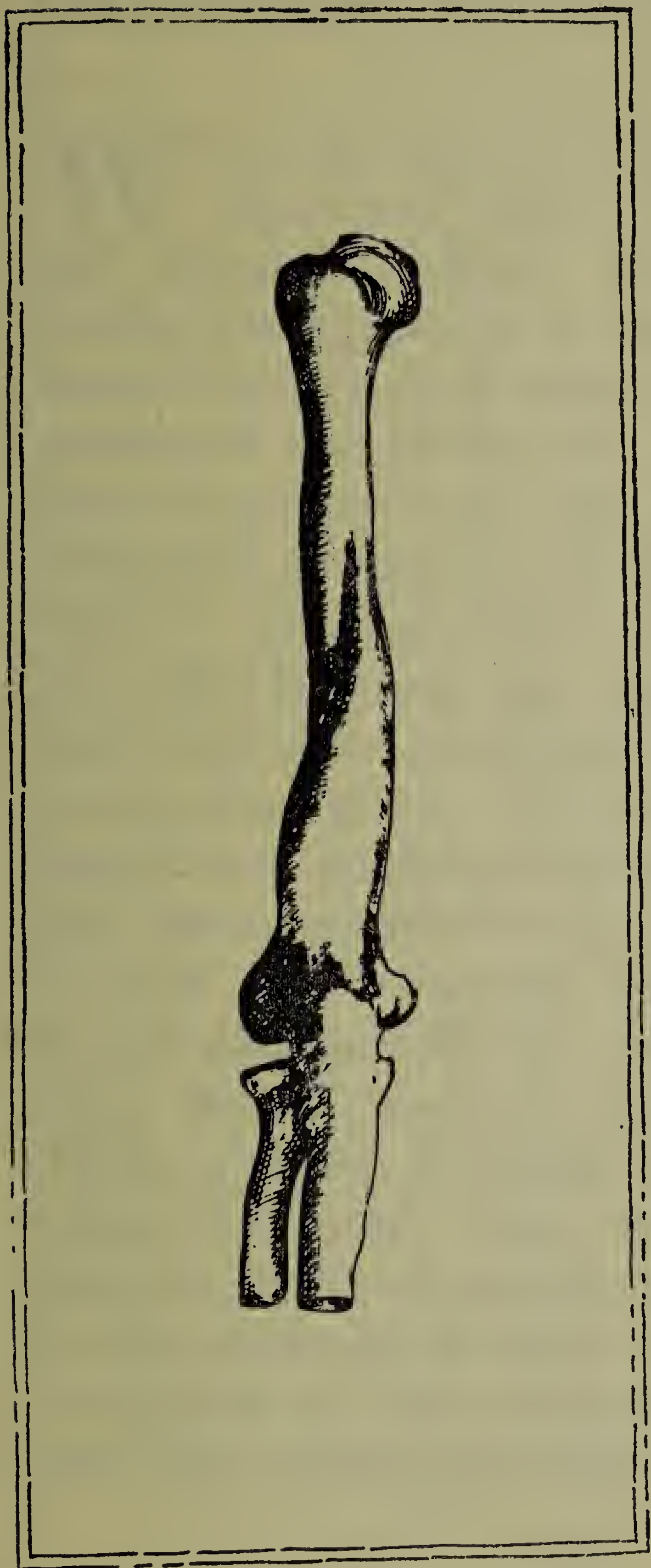
MVSCVLVS
*ex duobus carnoſis
principiis brachio cir
cundatus, vno in poſ
teriori parte altiore,
altero in anteriori hu
miliore, quæ ~~capita~~ in
idem coeuntia muſcu
lum hunc generant, ꝗ
in nerueam deſinens
tenuitatẽ, in cubiti os
inſertam, flectit artiſ
culum in exteriora pa
ulatim inclinando, cũ
ſuppoſito autèm muſ
culo rectam flexionẽ
facit,*



MVSCVLVS ab humili latere scapularũ ex dimidio ferè superioris eius partis ortus, iungitur alteri musculo, capiti brachii subdito, ambo per tendinem latum cubiti gibbero isertũtur, qui tendo duplex apparet sequẽdo fibras, exteriorẽq; partẽ ab hoc musculo accipit, interiorem autem ab altero, & si disiunctũ vnum ab reliquo attrahas, totã vt Galenus inquit, manũ extẽdes, hoc discrimine intercedente, quod hic in exteriora, alter in interiora aliqualiter deflectendo extendit.



MVSCVLVS *oriens ſub capite bra chii, qui iungitur muſ culo pręcedēti, et alte ri muſculo ei subdito, adeo vt ipſius particu la ab anatomicis pu= tetur, poſſunt tamen pro fibrarum rectitu= dine ſeperari, habet (vt ait Galenus) extē dere manum totam in tro obliquè deflectēdo*



MVSCVLVS
qui pars præcedentis ab Anatomicis puta tur, perpetuò carno= sus, posterioribus par tibus gibberi inserit', rectam articuli exten sionem facit.

LIBRI PRIMI
FINIS.

THE EXTANT COPIES OF CANANO PICTURATA DISSECTIO

WHEN the copy of Canano's *dissectio,* here reproduced came upon the market we had actual knowledge only of the existence of the one other copy in the Dresden library to which Choulant had called attention. True, he mentioned two others but he had never seen them, repeating only what Haller had reported. Choulant's conclusion that the book was "höchst selten" seemed justified. He had evidently not been able to locate any others, and his saying that there were only three or four copies known, was a mere guess. If it were anything else he would have mentioned where these known copies were reported to be.

Of the two copies mentioned by Haller, he had possessed the one which came from Viscount Bute's library, the other he had only seen. Hence a search in Haller's home town of Bern seemed indicated. One remembers the touching devotion Haller had always shown to Bern, how he had declined all sorts of brilliant offers only to be able to serve it in minor positions. Neither this devotion nor his great work seems to

have evoked the deserved recognition by the contemporary authorities, who even allowed the dispersal of his library, the conservation of which would have been a fitting monument to his immense labors in Bern. Thus the Austrian government came into possession of the books and distributed them among Padua, Milan and Pavia, the three great centres of learning in Northern Italy, then occupied by the Austrians.

Accident would have it, that the writer of this note, while engaged upon another search in the Archives and Library at Pavia, met there Prof. Ducceschi, the very man who had devoted more time than anyone else to finding out what could be found about Canano. Most of the information we can now give on this subject is due to his unfailing courtesy and assistance for which it is difficult to express adequately our appreciation. Prof. Ducceschi is himself the possessor of a very interesting copy of Canano's book, as we shall see later.

This chance encounter put us on the track of four copies in Italian public libraries. One at the University Library of Pavia, one at the Brera of Milan, one at the University Library of Padua and one at the Communal Library of Ferrara. It is unfortunate that not one of these

copies bore a mark which would have allowed us to identify it with one of those mentioned by Haller. His own must have had a note saying that the former owner, Viscount Bute had acquired it for 30 zecchini (or about 360 of the pre-war lire), and the other was annotated by Conrad Gesner to the effect that he had received it from Agostino de' Musso [Mosti ?] of Ferrara in 1543. No such notes are to be found in these copies, but as the Brera copy has the first leaves remargined and the Pavia copy lacks the first four leaves entirely, there is of course no telling what might have been written on these missing margins.

A few weeks ago we were in Rome. Everything there somehow recalled a former visit, nearly fifteen years ago, with the late Sir William Osler. He had told the story of how after years of vain searchings for a copy of Harvey's *De Motu cordis,* two were offered to him in one week. And here on the table in a shop of the Via del Babuino we found another Canano whose owner unfortunately appreciated its pricelessness. So we merely took note of it and wandered over to the old Saxon quarter of the town, near the Vatican, where the Lancisiana is housed in the Ospidale di San Spirito. We had heard that in

that famous library there once had been a copy of the Canano. The very amiable confrère, acting librarian, upon being asked the question, with a caracteristic gesture of regretful dispair, opened before us the huge manuscript catalogue. There was the entry of that copy of the Canano which had come to the library from the pontifical archiater Natale Saliceti. A little mortuary cross was drawn before the entry denoting that the book had mysteriously disappeared in 1891. It had been bound in green leather.

Then at Padua, where Prof. Ducceschi is installed now as the director of the Physiological Institute of the Università, we could examine leisurely his own most interesting copy. Its interest is not in the book itself which presents no unusual features, but in an appendix. This consists of a sort of a dummy of the book bound behind the original in boards which offer no hint as to their age. There is first one leaf showing in heavy black lines the disposition of the title, then on the following leaves are pasted 27 pen and ink drawings of the muscle figures of the book on a transparent paper. Most of these are merely outline drawings, only in a few is there an indication of shading. But on closer examination it appears that, coinciding

more or less with the outlines in pen and ink there are faint but clearly visible marks of a blunt instrument. The paper upon which the drawings are pasted looks very similar to that of the original, the filigrane, though very indistinct, appears to be identical. The drawings are unskillful, not done by a masterhand. They may be tracings from the printed figures, they may have served in the more or less mechanical transfer of the original drawings by Girolamo da Carpi to the engraver's plate.

Outside of Italy, in Europe, there are besides the Dresden copy, one in the Berlin Staatsbibliothek, from the legacy of the anatomist K. A. Rudolphi, who had noted that he had paid for it 20 ducats (about 200 Marks now), one at the British Museum in London where we examined it, but none at the Bibliothèque nationale, though we were told that it had figured in some catalogue. A very thorough search in every conceivable department of that great institution has failed to reveal it.

In America, besides the copy now in Dr. Cushing's hands in Boston, there has appeared another copy in Omaha, Nebraska, owned by Dr. Leroy Crummer.

We may therefore list the following extant copies :

1. Pavia. Biblioteca universitaria.

   Lacks the first four leaves, supplied in manuscript. Possibly one of the copies noted by Haller.

2. Milan. Biblioteca di Brera.

   The first four leaves re-margined. Possibly the other Haller copy. Manuscript date: 1541 (E. C. S.).

3. Padua. Biblioteca universitaria. (Busta 560, No. 26).

   Not imperfect as reported, only the last leaf is deprived of its upper margin. Contains some manuscript notes about Canano from Marini. Bound in full parchment. Formerly belonging to L. M. A. Caldani, Morgagni's successor.

4. Ferrara. Biblioteca comunale.

   We have no details about this copy which is said to be complete. The library possesses also a manuscript copy of Canano's opuscule, probably executed by Francesco Padovani in the 17th century.

   A similar manuscript copy exists also in London (Wellcome Medical Museum) with admirable pen drawings of the original engravings. The lines for the text are carefully ruled. Apparently in contemporary binding of about 1600. The pa-

per is stamped " Firenza " and has a papal shield as filigrane (Cushing, letter).

5. Dresden. Sächsische Landesbibliothek.

Only copy seen by Choulant. It is perfect and bears on the flyleaf the Mss. note: " Sum Andreae Aurifabri Vratislaviens. Doctor. 1545. Venetiis ".

6. Berlin. Preussische Staatsbibliothek.

K. A. Rudolphi's copy bought for 20 ducats.

7. London British Museum.

Perfect copy without notes.

Privately owned copies.

8. Prof. V. Ducceschi. Istituto di fisiologia, Padua.

Formerly in the possession of Egidio dalla Fabra, physician and professor of philosophy at the university of Ferrara (1683-1752). It came to the Biblioteca Conestabili (Cat. No. 6428), then to the Biblioteca Cavalieri (Cat. No. 257), both at Ferrara. The present owner acquired it at the sale of the latter library in 1922.

Bound in boards, it contains the ex libris Cavalieri, and a portrait engraving of Canano. Besides a dummy as noted above.

9. Dr. Harvey Cushing. Prof. of Surgery Harvard Medical School. Boston, Massachusetts.

Copy acquired in Florence from private dealer in 1923. With autograph dedication : " Jacobi

boni Ja. Bap.[ta] Canani munere ". The provenance of the copy is not definitely known, but it seems likely to be the one reported by Barotti and Zaffarini, as bearing annotations by the author. This copy, after having been in the possession of Ignazio Vari, reported author of a biography of Canano of which nothing further is known, was thought to have disappeared. The Cushing copy has the following dedication on a flyleaf:

" Al Signor Cesare Pirovano uno degli amici più cari del compianto mio Luigi che divise la trepidanza e le gioje che le venivano procurate dalla coltura appassionata, dello studio di libri antichi. Por tali sensi mi professa anch' io di Lei Afma amica Costanza Pozzi V.[va] Angiolini. Maggio 9. 1897 ".

This copy is here reproduced in facsimile.

10. Dr. Leroy Crummer. Omaha, Nebraska.

Copy acquired in Milan from private dealer in 1923.

11. Private dealer in Rome (March 1925).

Perfect copy without notes. Bound red leather with 18th. century gold tooling.

A. C. K.

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